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AGRICULTURAL AND MECHANICAL COLLEGE RECORD.

VOL. 2 NO. 4

MARCH, 1904.

WEST RALEIGH, N. C.

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Persons wishing to receive the College Catalogue, or other numbers of the Record, or desiring any information concerning the College, may address

President GEO. T. WINSTON, LL.D.,
Agricultural and Mechanical College,
West Raleigh, N. C.

THE

NORTH CAROLINA COLLEGE

OF

AGRICULTURE AND MECHANIC ARTS,

WEST RALEIGH.

1903—1904.

RALEIGH:
E. M. Uzzell & Co., State Printers and Binders,
1904.

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COLLEGE CALENDAR.

1904.

Thursday, July	14,	Entrance examination at each county court-house, 10 A. M.
Tuesday, August	30,	Entrance examination at the College, 9 A. M.
Wednesday, August	31,	
Thursday, September	1,	First Term begins; Registration Day.
Thursday, November	24,	Thanksgiving Day.
Wednesday, December	21,	First Term ends.

1905.

Wednesday, January	4,	Entrance examinations.
Thursday, January	5,	Second Term begins; Registration Day.
Saturday, March	18,	Second Term ends.
Monday, March	20,	Third Term begins; Registration Day.
Sunday, May	28,	Baccalaureate Sermon.
Monday, May	29,	Alumni Day.
Tuesday, May	30,	Annual Oration.
Wednesday, May	31,	Commencement Day.

BOARD OF TRUSTEES.

(State Board of Agriculture).

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T. K. Bruner, *Secretary ex officio*, Raleigh.

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DANIEL HARVEY HILL, A.M., Professor of English.

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HENRY MERRYMAN WILSON, A.B., Professor of Textile Industry.

CHARLES WILLIAM BURKETT, M.Sc., Ph.D., Professor of Agriculture.

THOMAS MURRITT DICK, U. S. Navy, Professor of Mechanical Engineering.

TAIT BUTLER, V.S., Professor of Zoology and Veterinary Science.

FRANK LINCOLN STEVENS, M.S., Ph.D., Professor of Botany and Vegetable Pathology.

BENJAMIN WESLEY KILGORE, M.S., Lecturer on Soils and Fertilizers.

ROBERT E. LEE YATES, A.M., Assistant Professor of Mathematics.

CHALMER KIRK McCLELLAND, M.S., Assistant Professor of Agriculture.

CHARLES BENJAMIN PARK, Superintendent of Shops.

THOMAS NELSON, Instructor in Weaving and Designing.

VIRGIL WILLIAM BRAGG, Instructor in Wood-working.

THOMAS ALFRED CHITTENDEN, B.S., Instructor in Mechanical Drawing.

FRANKLIN SHERMAN, B.S.A., Instructor in Entomology.

JOHN CHESTER KENDALL, B.S., Instructor in Dairying.

CARROLL LAMB MANN, B.S., Instructor in Mathematics.

PINCKNEY GUSTAVE DEAL, Instructor in Forge Shop.

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GEORGE SUMMEY, JR., Ph.D., Instructor in English.

WINFRED MORSE ADAMS, B.S., Instructor in Electrical Engineering.

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JOHN HOWARD GLENN, B.E., Instructor in Drawing.

ALBERT ADAMS HASKELL, B.S., Instructor in Dyeing.

HARLLEE MACCALL, Instructor in Mathematics.

OLIVER MAX GARDNER, B.S., Instructor in Chemistry.

CHARLES FREDERICK VON HERRMANN, Instructor in Meteorology.

OTHER OFFICERS.

ARTHUR FINN BOWEN, Bursar.

FREDERICK ERASTUS SLOAN, B.S., Registrar.

MISS CAROLINE BALDWIN SHERMAN, Librarian.

BENJAMIN SMITH SKINNER, Farm Superintendent and Steward.

JAMES RUFUS ROGERS, A.B., M.D., Physician.

MRS. DAISY LEWIS, Hospital Matron.

AGRICULTURAL EXPERIMENT STATION DEPARTMENT.

GEORGE TAYLOE WINSTON, A.M., LL.D., President.

BENJAMIN WESLEY KILGORE, M.S., Director.

WILLIAM ALPHONSO WITHERS, A.M., Chemist.

WILBUR FISK MASSEY, C.E., Horticulturist.

CHARLES WILLIAM BURKETT, M.Sc., Ph.D., Agriculturist.

TAIT BUTLER, V.S., Veterinarian.

FRANK LINCOLN STEVENS, M.S., Ph.D., Biologist.

FRANKLIN SHERMAN, JR., B.S. Agr., Entomologist.

JOHN STRANCHON JEFFREY, Poultryman.

WILLIAM GOLD MORRISON, M.A., Assistant Chemist.

JOHN CHESTER KENDALL, B.S., Assistant, Dairy Husbandry.

BENJAMIN FRANKLIN WALTON, B.S., Asst., Field Experiments.

ARTHUR FINN BOWEN, Bursar.

MILITARY ORGANIZATION.

CAPTAIN FREDERICK E. PHELPS, U. S. Army (retired), Commandant.

Staff.

J. B. HARDING, Major.

M. E. WEEKS, Captain and Adjutant.

W. J. PATTON, Captain and Quartermaster.

E. E. LINCOLN, Captain and Assistant Quartermaster.

Non-Commissioned Staff.

W. M. CHAMBERS, Sergeant-major.

S. GRAYDON, Quartermaster Sergeant.

F. W. HADLEY, Color Sergeant.

Band.

E. T. ROBERSON, Instructor.

H. L. ALDERMAN, Captain.

B. F. HUGGINS, First Lieutenant.

E. C. BAGWELL, Second Lieutenant.

H. B. CARTWRIGHT, First Sergeant.

L. M. PARKER, Second Sergeant.

J. E. WILLIAMS, Third Sergeant.

J. A. PARK, Fourth Sergeant.

T. J. OGBURN, Chief Trumpeter.

R. H. HARPER, Drum-major and First Lieutenant.

Company A.

WILLIAM RICHARDSON, Captain.

P. S. GRIERSON, First Lieutenant.

R. P. REECE, Second Lieutenant.

JULIAN M. HOWARD, First Sergeant.

S. N. KNOX, Second Sergeant.

J. H. SQUIRES, Third Sergeant.

C. T. VENABLE, Fourth Sergeant.

D. A. COX, First Corporal.

T. M. LYKES, Second Corporal.

W. B. MOORMAN, Third Corporal.

C. G. NICHOLS, Fourth Corporal.

Company D.

H. M. HUNTER, Captain.

J. A. MILLER, First Lieutenant.

W. F. MORSON, Second Lieutenant.

O. L. BAGLEY, First Sergeant.

G. P. MYATT, Second Sergeant.

W. H. McINTYRE, Third Sergeant.

H. F. CHREITZBERG, Fourth Sergeant.

H. M. TURNER, First Corporal.

W. G. KNOX, Second Corporal.

R. H. TILLMAN, Third Corporal.

W. S. TOMLINSON, Fourth Corporal.

Company B.

G. H. HODGES, Captain.

J. P. GULLEY, First Lieutenant.

J. McKIMMON, Second Lieutenant.

L. M. HOFFMAN, First Sergeant.

S. D. WALL, Second Sergeant.

L. G. LYKES, Third Sergeant.

L. V. EDWARDS, Fourth Sergeant.

S. H. CLARK, First Corporal.

J. F. HANSELMAN, Second Corporal.

L. MOORE, Third Corporal.

A. W. GREGORY, Fourth Corporal.

Company C.

L. A. NEAL, Captain.

W. W. BARBER, First Lieutenant.

W. W. FINLEY, Second Lieutenant.

E. G. PORTER, First Sergeant.

W. L. SMITH, Second Sergeant.

W. W. WATT, Third Sergeant.

O. H. HENDERSON, Fourth Sergeant.

A. D. SMITHWICK, First Corporal.

L. T. WINSTON, Second Corporal.

J. G. MORRISON, Third Corporal.

D. M. CLARK, Fourth Corporal.

Company E.

F. C. PHELPS, Captain.

J. C. BARBER, First Lieutenant.

JESSE M. HOWARD, Second Lieutenant.

J. D. SPINKS, First Sergeant.

C. A. SEIFERT, Second Sergeant.

S. M. VIELE, Third Sergeant.

R. C. LEHMAN, Fourth Sergeant.

C. W. HODGES, First Corporal.

J. D. CLARK, Second Corporal.

C. R. PEPPER, Third Corporal.

C. W. HEWLETT, Fourth Corporal.

Company F.

E. P. BAILEY, Captain.

G. W. FOUSHEE, First Lieutenant.

A. C. WHARTON, Second Lieutenant.

J. H. PEIRCE, First Sergeant.

A. T. KENYON, Second Sergeant.

G. G. LYNCH, Third Sergeant.

L. A. MURR, Fourth Sergeant.

W. F. BROCK, First Corporal.

C. W. HACKETT, Second Corporal.

D. W. ROBERTSON, Third Corporal.

G. P. ASBURY, Fourth Corporal.

GENERAL INFORMATION.

The North Carolina College of Agriculture and Mechanic Arts owes its existence to the combined liberality of the United States Government and the late R. S. Pullen, of Raleigh, together with the patriotic efforts of a few far-sighted men who saw that in the industrial life of North Carolina the time had come when trained and educated leaders were necessary. The first act of the General Assembly of this State in relation to the College was ratified in 1885, the bill which afterwards became a law, having been introduced by A. Leazar, Esq. The Congress of the United States in 1862 passed a bill, introduced by Senator Justin S. Morrill, of Vermont, giving to each State public lands "for the endowment, support, and maintenance of at least one college, whose leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

The income from this grant, amounting to $7,500 annually, was appropriated in 1887 by the Legislature of the State for the establishment and yearly maintenance of this College. Sufficient land for the College site and farm was donated by the late R. S. Pullen. The College was formally opened for students October 1, 1889, with one building and five teachers.

Additional funds were provided afterwards by the National Congress to aid in the support of the College and the State Agricultural Experiment Station, which is now a department of the College.

The College is beautifully located on the extension of Hillsboro street in the western suburbs of Raleigh, a mile and a quarter from the State Capitol. The site is suitable in all respects.

There is an abundant supply of water from twelve deep wells. The water is analyzed, both chemically and bacteriologically, at regular periods.

The College now owns six hundred acres of land and fifteen buildings, and its teaching force consists of thirty-four specialists. Its laboratories, drawing-rooms, and work-shops are well equipped. Its library contains four thousand volumes, and its reading-room is well supplied with literary and technical journals and newspapers.

BUILDINGS.

The Main Building is of brick, with brownstone trimmings, and is seventy by sixty feet; part four stories in height and the remainder two. The lower floors contain the offices of the President and the Bursar; several recitation-rooms; chemical and physical laboratories, and the armory. The upper stories are occupied by students.

In this, as in other buildings, every precaution has been taken to secure good sanitation. The rooms are well lighted, well ventilated, and conveniently arranged.

The Mechanical Engineering Building is a plain, substantial, two-story brick building, with large annex. It contains the laboratory, drawing-rooms, recitation-rooms, and shops of the department.

The Boiler House is a single-story brick building, containing boilers, fire-pump, and the machinery connected with the steam-heating plant.

Primrose Hall is a two-story brick building, which has attached a fine range of glass structures. The lower floor is occupied by the horticultural and veterinary laboratories. The upper floor contains a large lecture-room and botanical laboratory. The plant-houses are five in number, and are immediately accessible from the lecture-rooms and laboratories.

The Dairy and the Barn are frame buildings of modern design, and carefully planned for the purposes to which they are devoted. The barn is fifty by seventy-two feet, and three stories high; the dairy is twenty by forty feet, and two stories high.

The Textile Building is a two-story brick building one hundred and twenty-five by seventy-five feet, with a basement. Its construction is similar to a cotton mill, being an illustration of standard construction in this class of buildings. The basement contains the dyeing department, the first floor the looms and warp preparation machinery, and the second floor the carding and spinning machinery.

Watauga Hall is a three-story brick building, trimmed with brownstone and containing sixty rooms for dormitories. There is also a large dormitory in the attic, and in the basement are bath-rooms, which are free for students' use.

Pullen Hall.—In honor of the late R. Stanhope Pullen, the greatest benefactor of the College, the large new building recently finished has been called Pullen Hall. The basement of this building is used as a dining-room, and seats five hundred students. The first story is used for library, reading-room, and lecture-rooms. The second story

serves as the College auditorium. This room is commodious, comfortable and well lighted.

The Infirmary is a two-story brick building, containing a sitting-room, seven bed-rooms, three bath-rooms, a kitchen, linen-room, College Physician's office and medicine closet. The rooms are large, well ventilated, well lighted, and heated with open fire-places. Each room opens upon a large, pleasant portico. The furnishing and equipment of the rooms are suitable to hospitals.

Dormitories.—In addition to Watauga Hall, four two-story brick buildings are used exclusively for dormitories.

The College is supplied with a steam fire-pump, reservoir, hydrants, and fire hose to protect the buildings from burning.

The third and fourth dormitories, Primrose Hall and the green-houses attached are heated by hot water; the Textile Building is heated by the Sturtevant hot-air system, and the other College buildings are heated by the Warren-Webster vacuum system of steam-heating.

THE AGRICULTURAL EXPERIMENT STATION.

The North Carolina Agricultural Experiment Station is a department of the College. It was established originally as a division of the State Department of Agriculture, in accordance with an act of the General Assembly ratified March 12, 1877. Its work was greatly promoted by act of Congress of March 2, 1877, which made a liberal donation to each State for the purpose of investigations in agriculture and for publishing the same. The bill, which subsequently became a law, was introduced by Representative William H. Hatch of Missouri.

The Director's office is in the Agricultural Building in Raleigh and the laboratories in the main building at the College. The experimental work in agriculture, horticulture, stock and poultry raising, dairying, plant diseases and chemistry is carried on in the laboratories and on the College and adjoining grounds.

The Station is always glad to welcome visitors and show them the work in progress. The Station conducts a large correspondence with farmers and others concerning agricultural matters. It is always glad to receive and answer questions.

Publications relating to general farming matters and embodying the results of the experiments are published and sent free to all citi-

zens of the State who request them. A request addressed to the Agricultural Experiment Station, Raleigh, N. C., will bring these publications or answers to letters.

THE PURPOSE OF THE COLLEGE.

The College is an institution where young men of character, energy, and ambition may fit themselves for useful and honorable work in any line of industry in which training and skill are requisite to success. It is intended to train farmers, mechanics, engineers, architects, draughtsmen, machinists, electricians, miners, metallurgists, chemists, dyers, mill-workers, manufacturers, stock-raisers, fruit-growers, truckers, and dairymen, by giving them not only a liberal but also a special education, with such manual and technical training as will qualify them for their future work.

It offers practical and technical education in Agriculture, Horticulture, Animal Industry, Civil Engineering, Mechanical Engineering, Electrical Engineering, Mining Engineering, Metallurgy, Chemistry, Dyeing, Textile Industry, and Architecture. It also offers practical training in Carpentry, Wood-turning, Blacksmithing, Machinists' Work, Mill-work, Boiler-tending, Engine-tending, Dynamo-tending, and Road-building.

Although the leading purpose of the College is to furnish technical and practical instruction, yet other subjects essential to a liberal education are not omitted. Thorough instruction is given in English, Mathematics, History, Political Economy, Physics, Chemistry, Botany, Zoology, Physiology, and Geology.

The College is not a place for young men who desire merely a general education without manual or technical training; nor for lads lacking in physical development, mental capacity, or moral fibre; nor for those that are unable or unwilling to observe regularity, system, and order in their daily work.

PRIZES.

A first prize of ten dollars and a second prize of five dollars are awarded annually to the student in the Freshman Class who earns the largest and the next largest amount of money by agricultural labor on the College farm.

The Arthur H. Thomas Company of Philadelphia offers to the Biological Club as a prize an "Aplanatic Triplet" hand magnifier, to be awarded for the most deserving work in biology.

The Vermont Farm Machine Company of Bellow's Falls, Vt., offers a prize of their No. 7 U. S. Separator to the student preparing the best essay on the "Making of a Dairy Farm." The value of this prize is $100.

P. M. Sharples, West Chester, Pa., offers a prize of one-half the list price of a Separator to the student preparing the best essay on the subject "The Middle South as a Dairy Section." The value of this prize is from $50 to $250.

The Caraleigh Phosphate and Fertilizer Company of Raleigh, N. C., offers a prize of a ton of high-grade fertilizer to the student preparing the best essay on "Soil Fertilization." The value of the prize is $35.

Mr. Grimes Cowper, Raleigh, offers a prize of a pure-bred registered Jersey bull to the student preparing the best essay on "The Conformation of the Dairy Sire and Cow." The value of this prize is $50.

The MacMillan Company, New York, offers a prize of a set of Rural Science books, complete, to the student preparing the best essay on "The Farmer and His Library." The value of this prize is $25.

Charles Scribner's Sons, New York, offer a prize of a set of books on Agriculture to the student preparing the best essay on the subject "The Farmer Should be a Student Always." The value of this prize is $5.

The Zenner Disinfectant Company, Detroit, Mich., offers a silver medal to the student making the best report on the Live Stock Exhibit at the State Fair. The value of this medal is $25.

The North Carolina State Fair Association offers a prize of $5 to the student preparing the best essay on the Live Stock Exhibit at the State Fair.

DISCIPLINE.

The College is under military discipline and the students are regularly organized into a battalion. A printed copy of rules and regulations is furnished each student on admission, and he is expected to conform to the same during his connection with the institution. The discipline is intended to secure studious and economical habits, with punctuality, system, and order in the performance of all duties. A durable uniform, which is required to be worn on all occasions, prevents extravagance and folly in dress; rooms plainly furnished and a mess-hall economically managed by the College prevent extravagance in living; regular study hours, day and night, with proper restrictions

as to visiting Raleigh, check, or at least minimize, tendencies to idleness, vice, and rowdyism.

Regular reports of scholarship and conduct are made to parents and guardians three times a year. Special reports are made whenever necessary. Students who are persistently neglectful of duty, or manifestly unable to do the work required, will be discharged at any time. The Faculty will require any student to withdraw whenever it is plain that his stay in the institution is not profitable to himself or to the College. Every effort is made to develop strong, intelligent, high-toned men; and proper patience, forbearance, and sympathy are used in this great work; but the College is in no sense a reform school, and its work must not be hindered by the presence of young men who are grossly vicious, idle or incompetent.

LIBRARY AND READING-ROOMS.

The College Library occupies the first story of Pullen Hall. The reading-room is supplied regularly with about one hundred and fifty magazines and journals of various kinds, and yearly additions are being made to this number. The library contains about four thousand volumes. There are also reference libraries in the different departments. The library is kept open from 9 A. M. to 6 P. M. The Librarian is always present to assist students in finding desired information.

LIBRARY FACILITIES.

The Olivia Raney Library in Raleigh, containing now about seven thousand volumes, is free to the students and they have the privilege of borrowing books from it. Students also have the privilege of consulting books in the State Library.

STATE MUSEUM.

Students have free access to the large collections of the State Museum. These collections furnish most excellent opportunities for studies in Geology, Mineralogy, Mining, Forestry, and Natural History.

COLLEGE SOCIETIES.

Such college organizations are encouraged as tend to the formation of good character, the development of manly physical vigor, and the promotion of literary, scientific, and technical research and training.

The Young Men's Christian Association, containing in its membership representatives of all the Christian denominations, meets regularly each Sabbath for conference, Bible study and worship, and exerts a wholesome influence throughout the College.

Members of the Association will meet and welcome new students at the depot.

Farmers' Institute.—The students in the Winter Course in Dairying and Agriculture meet every Wednesday night during the winter term for a discussion of practical agricultural problems. The meetings are conducted in the manner of a Farmers' Institute and give training in conducting farmers' meetings, *ex tempore* speaking on agricultural questions, and the writing and reading of reports on various farm operations.

The Rural Science Club meets semi-monthly for the discussion of agricultural subjects, review of current agricultural publications, and reports on personal experiments and the work of the College farm and Experiment Station.

The Biological Club meets semi-monthly for the discussion of biological subjects in their relation to practical agriculture. Students here present results of their own investigations and observations and reviews of the more important current publications, particularly those from the United States Department of Agriculture.

The Liebig Chemical Society meets fortnightly for the discussion of chemical subjects and for review of the current chemical literature, with which the College is well supplied.

Electrical Engineering Society.—The members of the Society meet once a week in the physical laboratory. To review the articles on electrical engineering in the current journals is one of the chief objects of the Society. The Society has at its disposal the best periodicals, most of which are furnished free of charge by the publishers.

The Textile Society meets once a month for the discussion of subjects relating to cotton manufacturing. Articles in current journals are also discussed. The Society has placed in the library the best textile periodicals, some of which are furnished free of charge by the publishers.

The Pullen, Leazar and Tenerian Literary Societies afford excellent opportunities for practice in declamation, debate, composition, and parliamentary law, as well as opportunities for social pleasure and recreation.

The Athletic Association is intended to promote physical health and manly spirit through athletic sports. Under the direction of the Athletic Committee of the Faculty it promotes practice in base-ball, foot-ball, etc. The College is provided with extensive grounds, which furnish ample facilities for military drill and athletic sports.

The Dramatic Club presents at least one play each year to the students and people of Raleigh. The plays selected are of high literary character, and offer full opportunities for artistic and clever acting.

The Glee Club is composed of about twenty young men, embracing the best musical talent of the College. It aims to give one concert each year, and afterwards to sing at various College entertainments and functions during the year.

The Alumni Association meets on Monday of each year preceding Commencement day, transacts its annual business, hears the Alumni oration and attends the annual Alumni banquet. This Association has established a Student Aid Fund to assist needy students in obtaining their education at the College by making them small loans.

REQUISITES FOR ADMISSION.

Applicants for admission must be at least sixteen years of age and must bring certificates of good moral character from the school last attended.

To the Four Year Courses.—Applicants for admission to the Freshman Class of all four year courses will be examined on the following subjects: Arithmetic (complete), Algebra (through simple equations), English Grammar, Analysis and Composition, and American History. No student will be admitted to the Freshman Class whose examination papers are seriously faulty in spelling, grammar, punctuation or division into paragraphs.

To the Two Year Courses.—Applicants for admission to the two year course in Textile Industry will take the same examinations as those required of candidates for admission to the Freshman Class. in Mechanic Arts will be examined on Arithmetic (through decimal Applicants for admission to the two year courses in Agriculture and fractions), English Grammar and Composition, and American History.

Applicants for admission to the two-year course in Agriculture, if they are twenty years of age, or over, will not be required to take the entrance examinations.

To the Winter Courses.—No entrance examination is required of candidates for admission to the winter courses. No one under eighteen years of age will be admitted to a winter course.

TIME OF EXAMINATIONS.

Entrance examinations will be held by the County Superintendents of Instruction in each court-house in the State at 10 o'clock A. M. the second Thursday in July of each year. The date for 1904 is July 14th. These examinations will save the expense of a trip to Raleigh in case the candidate should fail, or if there should not be room enough for him in the College. Entrance examinations will be held also at the College at 9 o'clock A. M. on Tuesday and Wednesday preceding the opening day. The dates for 1904 are August 30th and 31st.

ADMISSION WITHOUT EXAMINATION.

The following persons will be admitted without examination:

1. Applicants for admission to winter courses over eighteen years of age.
2. Applicants for admission to the two-year course in Agriculture, if they are over twenty years of age.
3. School-teachers holding teachers' certificates.
4. Graduates of those High Schools and Academies whose certificates are accepted by the Faculty of this College.

SESSION.

The College session lasts nine months, and opens annually the first Thursday in September and closes the last Wednesday in May, with a vacation of about ten days at Christmas.

EXPENSES.

The total expenses of a student for the first year are as follows:

Tuition	$ 20.00
Room rent	10.00
Fuel and lights	12.50
Furniture	2.00
Library	1.00
Incidental	1.00
Medical attention and medicine	4.50
Physical culture	1.00

Registration	$ 2.00
Board	72.00
Shop (material and use of tools)	1.00
Drawing (material furnished)	1.00
Uniform and cap	14.30
Drawing instruments	8.85
Books (estimated cost)	5.00
Laundry (estimated cost)	10.00
Total expenses for year	$166.15

A student on entering college will need about forty dollars to meet his various dues.

Each student is required to wear an overcoat during cold weather. Overcoats may be brought from home or purchased in the city. In order to secure uniformity, dark colors (black or dark gray) are required. Students having scholarships do not pay tuition. Their total expenses are $146.15. The first three items above, namely, tuition, room rent, and fuel and lights, amounting to $42.50, are collected in monthly payments of $4.75 a month, on the first of each month, with no deduction for less time than one month. The registration, furniture, and medical fees are collected one-half ($4.25) in September, or whenever the student enters, and one-half ($4.25) in January. Students registering on the day appointed for registration are excused from paying the registration fee. Library, incidental, and physical culture fees are collected in September, or whenever the student enters. Board is payable in installments of $8 per month on the first day of each month from September to May inclusive. Board for less time than one month is charged for at the rate of fifty cents a day. Choice is given between paying by the month or by the day. The College Bursar is forbidden by the Trustees to give credit, and there is no deviation from this rule.

The College rooms are supplied with necessary furniture. Each student should bring with him two pairs of blankets, two pairs of sheets, two pillow-cases, and two bed-spreads for single bed.

In addition to the fees enumerated above, advanced students are required to pay fees as follows: A fee of $1 from students taking work in biological, physical, or electrical laboratory, for material furnished. A deposit of $3 from all Sophomores to cover breakages in chemical laboratory. Juniors and Seniors taking chemical laboratory make deposits of $5 and $8 respectively for the same pur-

pose. A deposit of $3 from mining engineering Seniors to cover breakages in assaying and electro-chemical laboratory. A deposit of $3 from Juniors and Seniors taking dyeing laboratory, to cover breakages. A deposit of $5 from textile students to cover cost of designing, supplies, tools, etc. Any unused portion of deposits to chemical and dyeing laboratories or to the textile department will be returned at the end of the year. If the deposit made is not sufficient to cover breakages and cost of material furnished, the students are required to make good the deficiency.

UNIFORM.

The College uniform must be worn by all students excepting winter course students. It must be purchased at the College from the contractor. The uniform is of a strong gray cloth, and with care it will last a year. New students are especially cautioned not to bring with them to the College a supply of citizens' clothing, as the uniform must be worn on all occasions. Each student is required to wear an overcoat during cold weather. Overcoats may be brought from home or purchased in the city. In order to secure uniformity, dark colors (black or dark gray) are required.

FREE TUITION.

Scholarships, one hundred and twenty in number, conferring free tuition, are given to needy boys of talent and character. As far as possible, these scholarships are distributed among the counties of the State. Appointments are made only by the President of the College upon written recommendation of members of the Legislature. The scholarships are not intended for people who have property. Certificates of inability to pay must be made by the applicant and endorsed by the person recommending him. A scholarship once bestowed may be retained by the holder until graduation, unless he prove neglectful of his studies or guilty of serious misconduct.

SELF-HELP.

Many students pay their own expenses, either wholly or partly, by doing various kinds of work. There is regular employment for a limited number, enabling them to earn from $4 to $10 a month. There is also occasional employment, paying from $2.50 to $5 a month. The work offered is mainly on the farm, in the barn, milking and feeding cattle, etc., and is for agricultural students only. There is very

little work available for others, except serving in the dining-room. Young men should not rely upon material help from work the first year, as most of the work is given to students who have had a year's experience at the College. Application for work should be made before the student comes to college.

STUDENT LOAN FUNDS.

The Alumni Association of the College has established a small fund to be lent to needy students of talent and character. The loans are made at six per cent., and good security is required. Sufficient time is given for repayment to enable the student to earn the money himself. The amount lent to each student is limited. The purpose is to help young men who are willing to help themselves and who cannot find sufficient employment while in college to meet all their necessary expenses.

Contributions are solicited for this fund from students, *Alumni* and friends of education generally. The fund is administered by the College Bursar, under the direction of the President. At present the fund amounts to $672.81.

The sum of $69.51 has been contributed by friends as a memorial to Mrs. S. C. Carroll, for many years matron of the College. This fund is also loaned to needy students.

BOARD AND LODGING.

All students are expected to board in the College mess-hall and room in the College dormitories. An abundant supply of plain, nourishing food, with as large variety as possible, is furnished absolutely at cost. The charge at present is $8 per month, payable in advance, with reduction in case of withdrawal during the month.

Rooms in the College dormitories are supplied with electric lights, steam heat and all necessary furniture, except sheets, blankets, pillow-cases, bed-spreads and towels, which each student must furnish for himself. The charge for lodging is by the month, and there is no reduction in case of withdrawal. Lodging in the College buildings will not be supplied to special students, who are permitted, however, to board in the mess-hall if they so desire.

Any student over twenty-one years of age is permitted to room and board outside the College.

CARE OF THE SICK.

Every effort is made to protect the health of young men in the College. Regular inspections of the entire institution are made once a year, or oftener, by the State Board of Health. Similar inspections, at frequent intervals, are made by the College physician. There is an abundant supply of pure water from twelve deep wells. Each student has a regular routine of daily life, including abundant physical exercise in the shops and on the drill grounds.

In case of sickness a student is taken immediately to the College Infirmary, where he receives medical attention and careful nursing.

The College physician visits the Infirmary daily at 10 o'clock, and in cases of serious illness as frequently as may be required.

A trained nurse has charge of the Infirmary at all times.

COURSES OF INSTRUCTION.

The College offers the following Courses of Instruction:

I. Four Year Courses leading to degrees in:

1st. Agriculture (including Agriculture, Horticulture, Veterinary Science, Biology, and Agricultural Chemistry).

2d. Engineering (including Civil Engineering, Mechanical Engineering, Electrical Engineering, and Mining Engineering).

3d. Industrial Chemistry (including Metallurgy and Dyeing).

4th. Textile Industry or Cotton Manufacturing.

These courses offer a combination of practical and theoretical work, about half of the time being devoted to lectures and recitations and the other half to work in the shops, laboratories, drawing-rooms, green-houses, dairies, fields, and mills. They are intended to furnish both technical and liberal education. The Bachelor's degree is conferred upon any one who completes satisfactorily a Four Year Course.

II. Short Courses of two years (not leading to a degree) in Agriculture, in Textile Industry, in the Mechanic Arts (including Carpentry, Wood-turning, Blacksmithing, Machinist's Work and Drawing), and in Building and Contracting.

The Short Courses include nearly all the practical work of the Four Year Courses, with less theoretical instruction. They are intended for students who desire chiefly manual training or for those who are unable to complete the Four Year Courses.

III. Winter Courses in Agriculture and Dairying and in Road-building, beginning at the opening of College in January and extending to the close of the term ending in March.

IV. Normal Courses for the training of teachers along industrial lines.

V. The Summer School.

VI. Graduate Courses, extending over two years and leading to advanced degrees, are intended for students who have completed the Four Year Courses and who desire further instruction and training along special lines.

AGRICULTURAL COURSES.

I. The Four Year Course in Agriculture.
Ia. The Two Year Course in Agriculture.
Ib. The Winter Course in Agriculture and Dairying.

Aim and Scope.—The aim of the Agricultural Courses is to train young men in both the science and the practice of their profession. It is believed that every young man preparing to farm needs a double education—one that is practical, to fit him for his profession; another that is cultural, to fit him to live.

In order to meet the necessities of all young men who desire instruction in Agriculture, the College offers four distinct courses:

The four year course aims to give a training that is thoroughly practical as well as scientific in Agriculture and its various branches, such as Stock-raising, Dairying, and Horticulture. The strictly technical portion constitutes about one-third of the work. Of the remaining two-thirds of the course more than one-half is prescribed in the sciences. This is done for the training and information they give, and to prepare for the technical work of the course. Because of this, and because the subject-matter and the methods of the technical portion lie so fully within the domains of science, the course is essentially scientific rather than literary. Yet the College is mindful of the fundamental character of English Literature and of Political Economy as training studies, and reasonable attention to these studies is required.

The two year course is designed to meet the needs of those who are unable to take the longer course. It is especially devoted to the practical study of Agriculture and Horticulture, and their various branches, and the natural sciences which are so closely related to farming.

The ten weeks winter course in Agriculture is established to meet the needs of those who can spend only the winter at the College. The important and practical subjects of Agriculture and Horticulture and Stock-raising receive principal attention.

The ten weeks dairy course is a course in practical butter-making in accordance with the most approved methods of the modern creamery.

Methods of Instruction.—Instruction is by laboratory work, supplemented by text-books, lectures, and reference readings, which are almost constantly assigned from standard volumes and periodicals.

The equipment for the technical work of the course is rapidly increasing. The Department of Agriculture is fitting up laboratories for investigation in Soil Physics and in the mechanical analysis of soils. The dairy department is equipped with a modern creamery for pasteurizing, separating, creaming and churning, and for investigation in dairy bacteriology.

The department makes free use of the fields, orchards, and gardens, in which the Agricultural Experiment Station conducts experiments in methods of culture, in effects of several practices upon yield and upon fertility, in varieties of fruit, of vegetables, and of forage crops The methods employed and the results obtained are freely used for instruction.

In work other than purely technical the agricultural students meet the same instructors and enjoy the same privileges as other students of the College. In all departments the laboratory method is freely employed. The student uses apparatus with his own hands and consults the literature of the subject at every step.

Self-support while a Student.—The Board of Agriculture, in the interest of young men who are unable to meet necessary college expenses, has appropriated $2,000 annually for student labor. This generosity on the part of the Board enables every student to pay a good part of his college expenses; some are able to meet the entire expense this way. This sum appropriated is intended solely to pay for farm work. The work is precisely the sort of work that is done on the farm—plowing, hauling, tile-laying, feeding beef cattle, feeding dairy cattle, feeding and grooming horses, running ditches and terraces, repairing machinery and tools, harvesting crops, the care of hogs, poultry, etc.

This feature in the courses of Agriculture is helpful not only in defraying college expenses, but serves as a training and education as well.

Requisites for Admission.—Applicants for admission to the four year course in Agriculture must be at least sixteen years of age. They are examined in the following subjects: Arithmetic (complete), Algebra (through simple equations), English Grammar, and American History.

For the two year course in Agriculture no entrance examinations are required if the applicant is at least twenty years old. Applicants

not twenty years old desiring to enter the two year course will stand an examination in Arithmetic (through decimal fractions), English Grammar and Composition, and American History.

For the winter courses in Agriculture and Dairying no entrance examination is required, but applicants must be over eighteen years of age.

I. Four Year Course in Agriculture, leading to the Degree of Bachelor of Agriculture.

Freshman Year.

SUBJECTS.	PERIODS PER WEEK.*		
	1st Term.	2d Term.	3d Term.
Botany, Elementary, 31†	3	3	--
Botany, Systematic, 32	--	--	3
Zoology, 46	3	--	3
Entomology, 51	--	3	
Elementary Horticulture, 21	4	--	--
Pomology, 22	--	4	--
Dairying, 14	--	--	4
Algebra, 88	4	4	--
Geometry, 89	--	--	4
English, 92	3	3	3
Military Drill, 99	3	3	3

*The lecture and recitation periods are one hour; the laboratory, shop and other practice periods, two hours.

†The figures immediately following the name of the study are given to aid one in finding readily a description of the subject. Under each department a number precedes the description of the study.

Sophomore Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Breeds of Live Stock and Stock-judging, 1	3	--	--
Principles of Breeding and Stock-judging, 2	--	3	--
Stock-feeding, 3	--	--	3
Plant Diseases, 33	3	--	--
Animal Physiology, 47	--	3	--
Physiological Botany, 34	--	--	3
Inorganic Chemistry, 61	3	3	3
Inorganic Chemistry (laboratory), 62	2	2	2
Physics, 71	2	2	2
Free-hand Drawing, 76	2	--	--
Mechanical and Agricultural Drawing, 77	--	2	2
English, 93 and 95	2	2	2
Military Drill, 99	3	3	3

Junior Year.

Farm Equipment, 4	4	--	--
Soils, 5	--	4	--
Farm Crops, 6	--	--	4
Veterinary Anatomy, 41	4	--	--
Veterinary Medicine, 42	--	4	--
Veterinary Practice, 43	--	--	4
Agricultural Chemistry, 66	2	2	2
Geology, 58	2	2	2
Wood-work, 78	1	1	--
Forge-work, 79	1	1	--
Mechanical Technology, 80	1	1	--
Farm Machinery, 7	--	--	3
English and History, 97 and 96	2	2	2
Military Tactics, 100	1	1	1
Military Drill, 99	3	3	3

Senior Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
History of Agriculture, 18	--	--	3
General Bacteriology, 36	3	3	--
English, 96 and 94	2	2	2
Political Economy, 98	2	2	2
Military Drill, 99	3	3	3
Elect ten periods of the following :			
Animal Husbandry (horses), 8	2	--	--
Animal Husbandry (cattle), 9	--	2	--
Animal Husbandry (sheep and swine), 10	--	--	2
Agronomy, 11	3	--	--
Special Crops, 12	--	3	--
Soil Physics and Soil Management, 13	--	--	3
Dairy Bacteriology, 15	3	--	--
Experimental Dairying, 16	--	3	--
Dairy Seminary, 17	--	--	3
Veterinary Medicine, 44	3	3	3
Market Gardening, 23	3	--	--
Forestry, 24	--	3	--
Landscape Gardening, 25	--	--	3
Plant Diseases (advanced), 37	2	--	--
Entomology (advanced), 52	--	2	--
Economic Botany, 35	--	--	2
Industrial Chemistry, 68	2	2	2
Organic Chemistry, 63	2	2	2
Analytical Chemistry (laboratory), 64	5	--	--
Agricultural Chemical Analysis (laboratory), 65	--	5	5

Ia. The Two Year Course in Agriculture.

First Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Botany, Elementary, 31	3	3	--
Botany, Systematic, 32	--	--	3
Elementary Horticulture, 21	--	4	--
Pomology, 22	--	--	4
Dairying, 14	4	--	--
Elementary Agricultural Chemistry, 67	2	2	2
Arithmetic, 86	5	--	--
Algebra, 87	--	5	5
English, 91	3	3	3
Military Drill, 99	3	3	3

Second Year.

Elect seventeen periods from the following:

Breeds of Live Stock and Stock-judging, 1	3	--	--
Principles of Breeding and Stock-judging, 2	--	3	--
Stock-feeding, 3	--	--	3
Farm Equipment, 4	4	--	--
Soils, 5	--	4	--
Farm Crops, 6	--	--	4
Veterinary Anatomy, 41	4	--	--
Veterinary Medicine, 42	--	4	--
Veterinary Practice, 43	--	--	4
Market Gardening, 23	3	--	--
Forestry, 24	--	3	--
Landscape Gardening, 25	--	--	3
Plant Diseases, 33	3	--	--
Animal Physiology, 47	--	3	--
Physiological Botany, 34	--	--	3

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Zoology, 46	3	--	3
Entomology, 51	--	3	--
Inorganic Chemistry, 61	3	3	3
Inorganic Chemistry (laboratory), 62	2	2	2
Agricultural Chemistry, 66	2	2	2
Wood-work, 78	1	1	--
Forge-work, 79	1	1	--
Mechanical Technology, 80	1	1	--
Farm Machinery, 7	--	--	3
Military Drill, 99	3	3	3

WINTER COURSES IN AGRICULTURE AND DAIRYING.

General Statement.—The Winter Course in Dairying and the Winter Course in Agriculture are designed to meet the wants of young men who are ambitious to excel in their chosen vocation of farming and who feel the need of more and better preparation before taking up their life-work. The subjects presented in the two courses are those about which every young farmer should have definite and clear knowledge. In their treatment the topics are handled in such a way as to make the information to the student useful in the highest possible degree.

There is no longer any question concerning the value of advanced, definite knowledge concerning agriculture to those who follow farming; education and training pay on the farm as they do elsewhere in life.

The expenses of the course are so little, and the good to be derived so great, no young man in North Carolina can afford to miss the opportunity of getting this training so necessary in his work. The money necessary to meet the expenses for a whole term's instruction can be earned in a month or two before attending. Therefore no young man, even though he possess but a few dollars, can afford to miss the opportunity for training in his work.

The studies offered are dairying, stock-raising, creamery practice, stock-feeding, diseases of farm animals, dairy farming, breeding farm

animals, entomology, dairy chemistry, farm economics, and book-keeping. The class-room work is supplemented by practice in the creamery, barn, green-house, and work-shop.

Equipment.—The work in dairying, which includes butter-making, milk-testing, handling cream separators, pasteurizing cream and milk, and dairy bacteriology, is given in the Dairy Building. The building is equipped with separators, milk-testers, pasteurizer, and all tools required in making butter and preparing milk or cream for the city markets.

Requirements for Admission.—No entrance examination is required, but the students taking either the Dairy or Winter Course must be at least eighteen years of age and should have a common-school education.

Expenses—College Dues.—Each student is required to pay a laboratory fee of five dollars. Tuition and instruction are entirely free.

Other Expenses.—Books and note paper will cost from two to three dollars, and two white duck suits to wear in the dairy laboratory will cost one dollar each. The suits, however, are not required. Board and room may be secured for $2.50 per week. The total expenses of the whole ten weeks need not exceed thirty dollars.

Ib. The Winter Course in Agriculture and Dairying.

Butter-making.—This course includes all practical operations of creamery management. The student works with the guidance and under the direction of the Instructor at the same operations of butter-making, or pasteurizing, or milk-testing, until proficiency is obtained. He is required to follow the milk from the time it enters the laboratory and creamery until the product leaves it, and to determine the points in processes where losses occur and reasons why they occur. Six periods. Mr. KENDALL.

Milk and Butter Production.—This course consists of lectures and recitations on the methods of taking care of milk and the manufacturing of it into other products, also lectures upon construction, equipment and operation of creameries, dairies, and milk depots. Each student is required to draw a plan of a farm dairy and prepare an estimate for equipment of same. Two periods. Professor BURKETT and Mr. KENDALL.

Feeds and Feeding and Stock-raising.—This subject consists of an elementary study of the composition of foods; the constituents of

feeding, amount, combination and form necessary to give best results with various kinds of live stock.

The student is required to calculate digestibilities and nutritive ratios and to arrange therefrom proper feeding rations. Two periods. Professor BURKETT.

Dairy Farming.—Lectures are given under this subject upon the history, adaption, care and management of the different breeds of dairy cattle. Dairy animals are studied by the score card, in accordance with the practice of judging animals for dairy purposes.

Instruction will also be given upon the character of food-stuffs, the relation of food to the animal, and kind and quality of food for the best milk production. Two periods. Professor BURKETT.

Soil Study.—Lectures and recitations upon composition, formation, kinds and physical properties of soil and their improvement by cultivation, natural and artificial fertilizers, drainage, etc.

The work in class-room is supplemented by work in the field and soil physics laboratory. One period. Assistant Professor MCCLELLAND.

Farm Crops.—In this subject is included rotation of crops, green manuring, and a critical study of corn and cotton; judging of corn; condition of germination and growth; and improvement by selection and breeding. One period. Assistant Professor MCCLELLAND.

Soils and Fertilizers.—Lectures on fertilizers and fertilizing materials and on the typical classes of North Carolina soils. Two periods, five weeks. Director KILGORE.

Farm Chemistry.—Lectures on air, water, the chemistry of plant and animal nutrition, and the composition of milk and its products. Withers' *Syllabus*. Two periods. Mr. GARDNER.

Plants.—This course treats of plants in general, embracing such subjects as plant breeding, seed selection, seed testing, plant propagation and nutrition, classification, plant disease and its prevention, and bacteria and fungi in their relation to farm produce, treating of both the beneficial bacteria of farm operations and the injurious bacteria that produce disease, etc. Two periods. Professor STEVENS.

Economic Entomology.—This is a short course in which the more important noxious insects are studied, with special reference to methods of preventing their injuries. The various insecticides and methods of spraying are also included in this course. Two periods. Mr. SHERMAN.

Diseases of Live Stock.—The lectures on this subject consist of Elementary Veterinary Anatomy and Physiology with special refer-

ence to the digestive and reproductive organs and the most common diseases and their treatment. Four periods. Professor BUTLER.

Book-keeping.—This subject consists of the practical study of farm accounts, supplemented by numerous original examples and sets for practice. One period. Professor HILL.

Farm Economics.—This is an elementary course, dealing with production, distribution, and exchange of wealth. The leading topics discussed are capital, wages, money, transportation and taxation. One period. President WINSTON.

AGRICULTURE.

Equipment.

The College possesses the following equipment for instruction in Agriculture:

The farm includes six hundred acres, with two hundred and fifty acres under cultivation; a large three-story basement barn, 50 by 72 feet. The first floor is occupied by farm implements and machinery; the second story is occupied by horses, grain bins, cutting implements, etc.; the third story, by hay, which is elevated by a Ricker and Montgomery hay carrier. Just outside the barn are two 70-ton silos. These are connected with a No. 18 Ohio feed and ensilage cutter. Power for cutting is supplied by an eight-horse power Skinner engine. The farm is supplied with all necessary machinery for the most successful and up-to-date farming.

The Dairy Building contains three rooms and cellar, and is supplied with DeLaval, Sharpless, United States, Empire, National, and Reid Separators, Babcock Testers, various kinds and makes of churns, butter-workers, and cheese apparatus, etc.

The live stock consists of necessary horses and mules, a herd of dairy cattle, a herd of Aberdeen-Angus beef cattle, and a herd of swine. The Poland China and Berkshire swine are pure bred, and from high-class specimens. Breeding-stock is sold as a part of the farm products.

The poultry-yard is divided into sixteen lots. The buildings consist of incubator cellar, brooder-house, and hen-houses. Several different incubators are used. The poultry-yards contain the following breeds: White Wyandotte, White and Barred Plymouth Rock, Black Minorca, Brown Leghorn, Light Brahmas and Pekin Ducks.

Subjects of Instruction.

1. Breeds of Live Stock.—Lectures and recitations upon the history, characteristics, care and management, and adaption of the different breeds of live stock. Practical exercises are given in scoring and judging the various kinds of live stock with the score card. Three periods, first term. For Sophomores and second-year students. Professor BURKETT.

2. Principles of Breeding.—Lectures and recitations upon the laws of inheritance, and the principles and phenomena of evolution as applicable to the improvement of animals or plants. The aim is to bring every known principle of reproduction to the assistance of the breeder's art. Practical exercise in scoring and judging live stock, and in writing and tracing pedigrees. Three periods, second term. For Sophomores and second-year students. Professor BURKETT.

3. Stock-feeding and Hygiene.—Lectures and exercises upon the laws of nutrition, and the character of food-stuffs, and the kind and quality of foods to produce certain results. Practical exercises in calculating digestibility, nutritive ratios and feeding standards. Three periods, third term. For Sophomores and second-year students. Professor BURKETT.

4. Farm Equipment.—Lectures and recitations upon selecting, planning and equipping farms; planning and erecting farm buildings; farm vehicles and machinery; power, water and drainage; practical exercise in drawing plans of farms and farm buildings; leveling and laying drains, dynamometer tests of wagons and farm implements, etc. Four hours, first term. For Juniors and second-year students. Assistant Professor MCCLELLAND.

5. Soils.—Lectures and recitations upon composition, formation, kinds and physical properties of soils and their improvement by cultivation, natural and artificial fertilizers, drainage and irrigation. Practical exercises in testing physical properties of several soils, determining the relation of soils to heat, moisture, air and fertilizers, and mechanical analysis. Four hours, second term. For Juniors and second-year students. Assistant Professor MCCLELLAND.

6. Farm Crops.—Lectures and recitations upon the history, production, harvesting and marketing of farm crops. Practical exercise with growing and dried specimens of farm crops, including grasses, clovers and other forage crops. Four hours, third term. For Juniors and second-year students. Assistant Professor MCCLELLAND.

7. Farm Machinery.—Lectures and laboratory work on the tools and machinery of the farm, in reference to their design, construction, draft, durability and care. The student is required to set up and test the various machines used on the farm. Three hours, third term. For Juniors and second-year students. Assistant Professor McCLELLAND.

8. Animal Husbandry.—A critical study of the horse; his breeding and management; gaits; practice in expert judging of horses. Two periods, first term. For Seniors. Professor BURKETT.

9. Animal Husbandry.—A critical study of beef and dairy cattle; the breeding, feeding and management, and practice in expert judging of cattle. Two periods, second term. For Seniors. Professor BURKETT.

10. Animal Husbandry.—A critical study of sheep and swine in reference to type, wool or mutton; pork or bacon. The breeding, feeding and management of sheep and swine, and practical exercise in expert judging sheep and swine. Two periods, third term. For Seniors. Professor BURKETT.

11. Agronomy.—A critical study of the farm crops, corn and cotton; judging corn; conditions of germination and growth, and improvement by selection and breeding. Three periods, first term. For Seniors. Assistant Professor McCLELLAND.

12. Special Crops.—Special crops will be studied by the student in the laboratory and field. Three periods, second term. For Seniors. Assistant Professor McCLELLAND.

13. Soil Physics and Management.—This course is designed for advanced work in the study of soils, both in the laboratory and the field. Three periods, third term. For Seniors. Assistant Professor McCLELLAND.

14. Dairying.—Practice and occasional lectures. The course consists in general management of modern dairying, the methods of milk analysis, the bacteriology of milk, the use of separators, the testing of milk, ripening of cream, churning, working, packing, and scoring butter. Four periods, third term. For Freshmen. Four periods, first term. For first-year students. Professor BURKETT and Mr. KENDALL.

15. Dairy Bacteriology.—A laboratory course in the study of bacteria in its relation to creamery, butter-making, and cheese production. Three periods, first term. For Seniors. Mr. KENDALL.

16. Experimental Dairying.—Laboratory practice in making butter and cheese. Three periods, second term. For Seniors. Mr. KENDALL.

17. Dairy Seminary.—Laboratory practice in making butter and cheese of special commercial importance. Three periods, third term. For Seniors. Mr. KENDALL.

18. History of Agriculture and Rural Economics.—Lectures upon the history of agriculture; present agricultural methods in various counties, cost and relation, profits of various farm operators and systems. Three periods, third term. For Seniors. Professor BURKETT.

HORTICULTURE.

Equipment.

Twenty-three acres of land comprise the Horticultural Experiment farm. There is ample equipment of barns, silos, stock, and machinery. There are five communicating greenhouses, separated by glass partitions so that different night temperatures can be maintained to suit the various purposes to which the houses are devoted. In addition, there is one glass structure, without heat, for the culture of foreign grapes. There is kept a general collection of plants for botanical study and for practice in Floriculture, and in two of the houses winter forcing of vegetables and fruits is carried on, in order that the students may have practice in a line of work that is rapidly assuming commercial importance in the State. The building and greenhouses are heated in the most complete manner by hot water.

The entire basement of Primrose Hall is used as a Horticultural Laboratory, where practice in grafting, potting and cross fertilization of plants is constantly going on.

Subjects of Instruction.

21. Elementary Horticulture.—Four periods, first term. Required of Freshmen. Four periods, second term. Required of first-year students. Assistant Professor MCCLELLAND.

22. Pomology.—Four periods, second term. Required of Freshmen. Four periods, third term. Required of first-year students. Assistant Professor MCCLELLAND.

23. Market Gardening.—Lectures on the theory and practice of growing vegetables in open ground and under glass commercially. Three periods, first term. Elective for Seniors and second-year students.

24. Forestry.—Lectures on forest influences and methods of forest management, timbers and forest products. Three periods, second term. Elective for Seniors and second-year students.

25. Landscape Gardening.—Lectures on the history of the garden art and styles of ornamental gardening, planning of country places and farm-houses, and improvement of grounds in general. Three periods, third term. For Seniors and second-year students.

BOTANY AND VEGETABLE PATHOLOGY.

Equipment.

The biological laboratory is equipped with the books, specimens, sterilizers, microscopes, microtomes and small utensils needed in the prosecution of the work. The excellent herbarium has been mounted and is now accessible for class use. There is an extensive collection of seeds of both weeds and cultivated plants, and most of the important plant diseases are represented by herbarium and alcoholic specimens. The green-house is of great utility as a source of material, for seed-testing and for conducting physiological experiments.

Subjects of Instruction.

31. Elementary Botany.—Weekly lectures, accompanied by laboratory work and reference reading regarding the algæ, fungi, ferns, and seed plants. Morphology is emphasized, and the broad principles of nutrition, reproduction, sex, adaptation, and evolution are illustrated. Particular consideration is given to the fungi and seed plants. The student's knowledge is made his own through field-work and independent investigation. Three periods, first and second terms. Required of Freshmen and first-year students. Professor STEVENS.

32. Systematic Botany and Ecology.—The student becomes acquainted with the principal orders and families of plants of North Carolina as well as with the general problems of plant classification. More attention is given to the grouping of plants into societies and to the study of plant variation and adaptation than to mere collecting and classifying. The principles of plant breeding, crossing, pollination, budding, and grafting are taught. Three periods, third term. Required of Freshmen and first-year students. Professor STEVENS.

33. Plant Diseases.—Lectures and laboratory study of the principal types of plant diseases produced by bacteria, fungi or physiologi-

cal derangement, with specific consideration of the methods of treatment. This course emphasizes the principles of plant disease and places the student in a position to employ prophylactic and remedial methods rationally. Three periods, first term. Required of Sophomores and second-year students. Professor STEVENS.

34. Physiological Botany.—Lectures, demonstrations and laboratory work, treating of plant nutrition, reproduction, and growth. Especial attention is given to phases of the subject bearing most directly upon plant culture. Three periods, third term. Required of Sophomores and second-year students. Professor STEVENS.

35. Economic Botany.—A study of the more important groups of economic plants, weeds and medicinal plants, seed-testing, nitrification, and nitrogen fixation, origin of cultivated plants and of bacteria and fungi in their relation to Agriculture, etc. Two periods, third term. Required of Seniors. Professor STEVENS.

36. General Bacteriology.—Lectures and laboratory work on the nature, physiology, morphology, and economy of bacteria, with especial reference to home sanitation, disinfection, and to the relation of bacteria to disease in plants and animals. The student becomes familiar in the laboratory with methods of culture and investigation in bacteriology. Three periods, first and second terms. Required of Seniors. Professor STEVENS.

37. Plant Disease (Advanced).—Methods of culture and investigation of plant disease. This course is intended to prepare the student for original investigation in plant diseases. Two periods, first term. Elective for Seniors. Professor STEVENS.

VETERINARY SCIENCE.

The object of the teaching in this department is not to turn out educated veterinarians, but to more thoroughly equip the agricultural student for the breeding and management of live stock. In addition to the work required of all students in the Agricultural courses, as outlined below, the Senior students in the four year course in Agriculture may elect to do three hours a week during the entire year. When so elected, this work will be of a more advanced nature, but supplementary to that required of all students in the Agricultural courses.

41. Veterinary Anatomy.—Lectures, illustrated by charts and sketches, and, when practicable, by dissections.

Special attention will be given to the organs of digestion and locomotion and such other parts as are of particular interest to the stock farmer. Four periods, first term. Required of Juniors and elective for second-year students. Professor BUTLER and Doctor ROBERTS.

42. Veterinary Medicine.—Lectures on the actions, uses, and doses of the most common veterinary medicines, and the nature and cause of disease, with special reference to its prevention. Four periods, second term. Required of Juniors and elective for second-year students. Professor BUTLER and Doctor ROBERTS.

43. Veterinary Practice.—Lectures on the most common diseases and injuries of domestic animals, with appropriate treatment for the same. When practicable, these lectures will be illustrated by clinics, which will enable the student to become more familiar with the different diseases and to perform minor surgical operations under the direction of the Instructor. Four periods, third term. Required of Juniors and elective for second-year students. Professor BUTLER and Doctor ROBERTS.

44. Veterinary Medicine.—Advanced course in veterinary medicine and surgery, with clinical practice. Three periods. For Seniors. Professor BUTLER.

ZOOLOGY.

46. Elementary Zoology.—The fundamental principles of animal life, together with a knowledge of the structure and classification of animals, are developed by lectures, laboratory work, and reading. Two terms are devoted to vertebrates and invertebrates exclusive of insects but including some of the common parasites infesting man and the domestic animals. This course is intended to present a general view of the animal kingdom and to lay a foundation for the more special subjects that are to follow. Three periods, first and third terms. Required of Freshmen and second-year students. Doctor ROBERTS.

47. Animal Physiology.—A comparative study of the bodily functions of man and of the domestic animals. The subject will be covered by lectures and recitations, with laboratory experiments to illustrate principles of physiology. Three hours, second term. Required of Sophomores and second-year students. Doctor ROBERTS.

ENTOMOLOGY.

51. Elementary Entomology.—Elements of insect structure and classification. Injurious insects and remedies; *a*, of orchards; *b*, of

small fruits; *c*, of truck and garden crops; *d*, of cotton, corn, tobacco, grains, and grasses; *e*, of forest, shade, and ornamental plants; *f*, of barn, mill and household. Three periods, second term. Required of Freshmen. Mr. SHERMAN.

52. Entomology (Advanced).—Systematic study of orders and families of insects, with special reference to structure, classification, life-history and habits. Lectures and laboratory practice. Two periods, second term. For Seniors. Mr. SHERMAN.

GEOLOGY.

58. Elementary Geology.—Tarr's *Elementary Geology.* During the first and second terms the general principles of geology are studied with the minerals and rocks occurring in general formations. The study of the geology of North Carolina is taken up during the third term and special emphasis is laid upon its economic aspect. Two periods. Required of Juniors. Mr. MORRISON.

CHEMISTRY.*

61. Inorganic Chemistry.—Remsen's *College Chemistry.* The common elements and their principal compounds are studied, together with some of the fundamental principles of the science. The lectures are illustrated with experiments and the exhibition of specimens. Three periods. Required of Sophomores. Professor WITHERS and Mr. MORRISON.

62. Inorganic Chemistry.—Laboratory work. Remsen and Randall's *Laboratory Guide.* The student performs under the eye of the Instructor experiments designed to illustrate and emphasize the work of the class-room. He records in a note-book his observations and the conclusions drawn from them. Two periods. Required of Sophomores. Mr. HASKELL.

63. Organic Chemistry.—Remsen's *Introduction to the Study of the Compounds of Carbon.* The fundamental principles of organic chemistry and the more important compounds are studied. Two periods. Elective for Seniors. Mr. HASKELL.

64. Analytical Chemistry (Introductory).—A discussion of methods and principles involved in chemical analysis, together with laboratory work. Talbot's *Quantitative Chemical Analysis.* The student is taught to detect the presence of the more common elements

*For further information, see courses in Industrial Chemistry.

in unknown substances. He is then given practice in introductory gravimetric and volumetric quantitative work. Five periods, first term. Elective for Seniors. Mr. PAGE.

65. Agricultural Analysis.—Laboratory work. The work of the student in quantitative analysis is continued, embracing the analysis of those substances more closely related to his work, as fertilizers, feeding-stuffs, milk, butter, etc. Five periods, second and third terms. Elective for Seniors. Mr. PAGE.

66. Agricultural Chemistry.—Ingle's *Agricultural Chemistry.* A study of the facts obtained by the application of chemistry and chemical methods of investigation to agriculture. The laws of plant and animal nutrition, the economical feeding of plants and animals, and the maintenance of the fertility of the soil are considered from the chemical standpoint. Two periods. Required of Juniors. Elective for second-year students. Professor WITHERS.

67. Agricultural Chemistry (Elementary.—Two periods. Required of first-year students. Withers' *Syllabus.* Mr. MORRISON.

68. Industrial Chemistry.—Thorpe's *Outlines of Industrial Chemistry.* A discussion of the processes and principles involved in the more important chemical industries, particularly those whose raw materials are supplied by agriculture or whose products are utilized in agriculture. Two periods. Elective for Seniors. Professor WITHERS.

PHYSICS.*

71. Elementary Physics.—Properties of matter; fundamental units. British and metric standard measures; definitions of force, work, and power; laws of motion; principles of machines; mechanics of fluids; heat; sound; introduction to the study of light. Two periods. Required of Sophomores. Professor WEIHE.

DRAWING.†

76. Free-hand Drawing.—Work in the use of the pencil; isometric sketches; technical sketches of objects, usually parts of a machine. Two periods, first term. Required of Sophomores. Mr. GLENN.

77. Elementary Mechanical Drawing.—Use of instruments; geometric drawing; isometric drawing; elementary projections;

*For full information in regard to the Department of Physics, see course in Electrical Engineering.

†For full information in regard to shop-work, drawing and other Mechanical Engineering subjects, see course in Mechanical Engineering.

drawings made to scale from working sketches of pieces of a machine. Two periods, second and third terms. Required of Sophomores. Mr. GLENN.

SHOP-WORK.*

78. Wood-work.—Use of bench tools; working from drawings, lining, sawing, planing; practice in making simple exercises in wood; elementary exercises in wood-turning. One period, first and second terms. Required of Juniors and second-year students. Mr. BRAGG.

79. Forge-work.—Exercises in forging and welding; making exercises of iron; care of forge tools and fires. One period, first and second terms. For Juniors and second-year students. Mr. DEAL.

80. Mechanical Technology.—Classification and uses of wood-working and forging tools and machines; methods of wood-working and forging; care of belting and shafting. One period, first and second terms. For Juniors and second-year students. Mr. BRAGG.

MATHEMATICS.†

86. Arithmetic.—Begin with decimal fractions and complete the subject. Five periods, first term. Milne's *Standard Arithmetic.* Required of first-year students. Mr. MANN and Mr. MACCALL.

87. Algebra.—Up to quadratic equations. Wells's *Higher Algebra.* Five periods, second and third terms. Required of first-year students. Mr. MANN and Mr. MACCALL.

88. Advanced Algebra.—Wells's *Higher Algebra.* Begin at quadratic equations; general theory of equations, solution of higher equations, etc. Four periods, first and second terms. Required of Freshmen. Mr. LANG.

89. Geometry.—Plane and solid. Wentworth's *Plane and Solid Geometry.* Four periods, third term. Required of Freshmen. Mr. MACCALL.

ENGLISH.

91. English Composition.—A drill upon the forms of the language, the correct relation of words, the sentence, and the paragraph. Daily written exercises. Three periods. Required of first-year students. Mr. WILLIAMS and Doctor SUMMEY.

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*For full information in regard to shop-work, drawing and other Mechanical Engineering subjects, see course in Mechanical Engineering.

†For full information in regard to Mathematics, see course in Civil Engineering.

92. Introductory Composition and Rhetoric.—This course in the fundamentals of rhetoric is made thoroughly practical. Students write instead of studying about how to write. The written work is accompanied by a steady drill upon grammatical forms, accuracy, and ease of expression. The student is taught to plan all work, and then to develop his plan in simple, idiomatic English. Three periods. Required of Freshmen. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

93. Rhetoric, Criticism, Essays.—The student is taught the essentials of a good style by constant practice. Themes in narration, description, and exposition receive in this course especial attention. Required of Sophomores. Two periods, second term. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

94. Argumentation.—A study of the methods of our best speakers, followed by the laws of argumentation, and the writing of many exercises. Required of Seniors. Two periods, third term. Professor HILL.

95. American Literature.—By means of an introductory text and by much reading students are introduced to what is best in the literature of their own country. Books are studied at first hand. Synopses, paraphrases, and critiques required. Two periods, third term. Required of Sophomores. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

96. English Literature.—The development of English literature through its great periods and through its representative men. Much parallel reading is required. In a general way Minto's plan of study is followed. Two hours, third term. Required of Juniors. Two periods, first and second terms. Required of Seniors. Professor HILL.

HISTORY.

97. English History.—The text is supplemented by lectures on important periods. Two periods, first and second terms. Required of Juniors. Professor HILL.

POLITICAL ECONOMY.

98. Political Economy.—This course deals with public problems relating to the production, distribution and exchange of wealth. The leading topics discussed are capital, wages, money, transportation and taxation. Instruction is given by lectures and text-books. Required of Seniors. Two periods. President WINSTON.

MILITARY SCIENCE.

99. Drill.—Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies; Marches and Minor Tactics. United States Infantry Drill Regulations. Three afternoons. Required of all classes. Commandant and officers of the Battalion.

100. Tactics.—Theoretical instruction in the Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies; Outposts, Manual of Guard Duty, etc. One period. Required of Juniors. Captain PHELPS.

ENGINEERING COURSES.

Four Year Courses in
- II. Civil Engineering,
- III. Mechanical Engineering,
- IV. Electrical Engineering,
- V. Mining Engineering.

Two Year Courses in
- IIa. Building and Contracting,
- IIIa. Mechanic Arts.

Winter Course in
- IIb. Road-building.

COURSE IN CIVIL ENGINEERING.

The aim of the Course in Civil Engineering is to give such training as will enable our young men to take an active part in the work of advancing our State along material lines—developing its water-power, building railroads and public highways, constructing water supply and sewerage systems for our towns, etc. The student is given a large amount of practical work in the field and drafting-room, and acquires a fair degree of efficiency in the use of the various surveying instruments, and in drafting. At the same time it is recognized that a successful engineer requires a well trained mind—one that reasons logically, accurately and quickly. Therefore a thorough course is given in Pure Mathematics and in all those branches of Applied Mathematics which are involved in the solution of engineering problems.

The aim has been to make this pre-eminently a technical course, yet subjects of general culture are included in order to give the student a broader mental training and better preparation for social and business life.

II. The Four Year Course in Civil Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year.

SUBJECTS.	PERIODS PER WEEK.*		
	1st Term.	2d Term.	3d Term.
Free-hand Drawing, 131†	2	--	--
Mechanical Drawing, 132	--	2	2
Wood-work, 136	1	1	1
Forge-work, 137	1	1	1
Mechanical Technology, 142	1	1	1
Algebra, 123	4	4	--
Geometry, 124	--	--	4
Book-keeping, 129	1	1	1
Physics, 156	2	2	2
English, 188	3	3	3
History, 194	2	2	2
Military Drill, 199	3	3	3

Sophomore Year.

Architecture, 115	2	--	--
Architectural Drawing, 116	2	2	2
Geometry, 124	4	--	--
Trigonometry, 125	--	4	4
Descriptive Geometry, 105	--	2	2
Electricity and Magnetism, 157	2	2	2
Inorganic Chemistry, 181	3	3	3
Inorganic Chemistry (laboratory), 182	2	2	2
English, 189 and 191	2	2	2
Military Drill, 199	3	3	3

*The lecture and recitation periods are one hour; the laboratory, shop and other practice periods, two hours.

†The figures immediately following the name of the study are given to aid one in finding readily a description of the subject. Under each department a number precedes the description of the study.

Junior Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Surveying, 102 and 103	2	2	2
Surveying (field-work), 104	2	2	2
Construction, 111	2	--	--
Mechanics, 128	3	3	3
Drawing, 105	2	2	2
Graphic Statics, 101	--	2	2
Analytical Geometry, 126	4	4	--
Calculus, 127	--	--	4
English and History, 195 and 192	2	2	2
Military Tactics, 200	1	1	1
Military Drill, 199	3	3	3

Senior Year.

Mechanics of Materials, 112	3	--	--
Construction, 111	--	2	2
Road-building, 113	--	1	1
Roofs and Bridges, 109	3	--	--
Bridge Design, 106	--	3	3
Municipal Engineering, 107	2	2	2
Surveying (field-work), 108	2	3	3
Hydraulics, 110	--	2	2
Calculus, 127	3	--	--
English, 192 and 190	2	2	2
Political Economy, 197	2	2	2
Military Drill, 199	3	3	3

IIa. The Two Year Course in Building and Contracting.

First Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Free-hand Drawing, 131	2	--	--
Mechanical Drawing, 132	--	2	--
Wood-work, 136	2	2	--
Mechanical Technology, 142	1	1	1
Architecture, 115	2	2	2
Arithmetic, 121	5	--	--
Algebra, 122	--	5	5
Geometry, 124	--	--	4
English, 187	3	3	3
History, 193	2	2	2
Military Drill, 199	3	3	3

Second Year.

Construction, 111	2	2	2
Drawing	2	2	2
Contracts and Specifications	2	--	--
Estimates and Bills of Materials	--	2	2
Levelling and Use of Instruments	--	4	4
Algebra, 123	4	--	--
Geometry, 124	4	--	--
Trigonometry, 125	--	4	4
Book-keeping, 129	1	1	1
English, 188	3	3	3
Military Drill, 199	3	3	3

IIb. Winter Course in Road-building (January to May).

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Surveying	--	1	4
Road-building (including the Survey and Location, Materials, Method of Construction, Drainage, Bridges, and Machinery)	--	6	6
Drawing	--	4	4
Trigonometry, 125	--	4	4

CIVIL ENGINEERING.

Equipment.

There is a complete equipment of all instruments necessary to civil engineering field-work.

Subjects of Instruction.

101. Graphic Statics.—Determination of stresses in frame structures by graphical methods. Lectures and original problems. Two periods, second and third terms. Required of Juniors in Civil Engineering. Professor RIDDICK.

102. Surveying.—Land surveying, levelling, elements of triangulation, topographical surveying, road-making. Merriman's *Land Surveying*. Two periods, first term. Required of Juniors in Civil Engineering. Mr. LANG.

103. Railroad Engineering.—Reconnoissance, preliminary and location surveys, cross-sections, etc. Searles' *Field Engineering*. Two periods, second and third terms. Required of Juniors in Civil Engineering. Mr. LANG.

104. Surveying.—Field work. Use of instruments, compass, level, transit and plane table. Practical work in land surveying, topography, levelling, railroad surveying, working up notes and platting. Two periods. Required of Juniors in Civil Engineering. Mr. MANN.

105. Drawing.—Descriptive Geometry, Stereotomy. Text-book, lectures, problems and completed drawings. Two periods, second and third terms. Required of Sophomores in Civil Engineering. Two periods. Required of Juniors in Civil Engineering. Mr. LANG.

106. Bridge Design.—Calculation of stresses, design, specifications and estimate of cost of a wooden roof truss and a steel highway bridge. Three periods, second and third terms. Required of Seniors in Civil Engineering. Professor RIDDICK.

107. Municipal Engineering.—Text-book, lectures. Two periods, second and third terms. Required of Seniors in Civil Engineering. Mr. LANG.

108. Surveying (Field-work).—Triangulation and topography, surveys for sewers, water-works, etc. Two pediods, first term. Three periods, second and third terms. Required of Seniors in Civil Engineering. Mr. MANN.

109. Roofs and Bridges.—Determination of stresses in roof and bridge trusses by the analytical method. Merriman's *Roofs and Bridges*. Original problems. Three periods, first term. Required of Seniors in Civil Engineering. Professor RIDDICK.

110. Hydraulics.—Methods of measuring flow of streams, laws governing flow in pipes and conduits, determination of water-power in streams, testing of hydraulic motors. Text-book, Merriman's *Hydraulics*. Two periods, second and third terms. Required of Seniors in Engineering. Professor RIDDICK.

111. Construction.—Masonry, foundations, railroads, dams, retaining walls, arches, etc. Baker's *Masonry Construction*. Lectures. Two periods, first term. Required of Juniors in Civil Engineering. Two periods, second and third terms. Required of Seniors in Civil Engineering. Professor RIDDICK.

112. Mechanics of Materials.—Study of stresses in beams, columns, etc. Merriman's *Mechanics of Materials*. Three periods, first term. Required of Seniors in Civil and in Mechanical Engineering. Professor RIDDICK.

113. Road-building.—Text-book on construction of roads, streets, and pavements. Lectures on practical road-making in North Carolina. One period, second and third terms. Required of Seniors in Civil Engineering. Professor RIDDICK.

ARCHITECTURE.

115. Architecture.—Building materials, method of constructing buildings, plans, specifications, bill of materials, estimate of cost, design of buildings. Lectures. Two periods, first term. Required of Sophomores in Civil Engineering. Professor RIDDICK.

116. Architectural Drawing.—Drawings from a building already constructed, design of a dwelling, detail and perspective drawings.

Two periods. Required of Sophomores in Civil Engineering. Mr. MANN.

MATHEMATICS.

121. Arithmetic.—Milne's *Standard Arithmetic.* Begin with decimal fractions and complete the subject. Five periods, first term. Required of first-year students in Mechanic Arts. Mr. MACCALL and Mr. MANN.

122. Algebra.—Wells' *Higher Algebra.* Up to quadratic equations. Five periods, second and third terms. Required of first-year students in Mechanic Arts. Mr. MANN, Mr. LANG and Mr. MACCALL.

123. Advanced Algebra.—Wells' *Higher Algebra.* Begin at quadratic equations; general theory of equations, solution of higher equations, etc. Four periods, first and second terms. Required of all Freshmen and second-year students in Mechanic Arts. Mr. YATES and Mr. MACCALL.

124. Geometry.—Plane and Solid. Wentworth's *Plane and Solid Geometry.* Four periods, third term. Required of all Freshmen and of second-year students in Mechanic Arts. Four periods, first term. Required of Sophomores. Mr. YATES.

125. Trigonometry.—Four periods, second and third terms. Required of Sophomores. Mr. YATES.

126. Analytical Geometry.—Nichols' *Analytical Geometry.* Conic sections, higher plane curves, Geometry of three dimensions. Four periods, first and second terms. Required of Juniors. Mr. YATES.

127. Calculus.—Osborne's *Elements of Calculus.* Differential and integral, elements of differential equations. Four periods, third term. Required of Juniors. Three periods, first term. Required of Seniors. Professor RIDDICK.

128. Mechanics.—Nature and measurement of forces, moments, conditions of equilibrium, moment of inertia, laws of motion, constraining and accelerating forces, dynamics of a rigid body, momentum and impact, work, power, friction, application of principles to various engineering problems. Three periods. Required of Juniors. Mr. LANG.

129. Book-keeping.—The work in the text-books supplemented by numerous original examples and sets for practice. One period. Required of Freshmen. Mr. MANN and Mr. MACCALL.

COURSES IN MECHANICAL ENGINEERING AND MECHANIC ARTS.

The regular Four Year Course in Mechanical Engineering is intended to fit the student for positions of responsibility in engineering work, and also to furnish him with a basis to carry on more advanced engineering studies. It treats of the development and transmission of power, the design and construction of machines, and the calibration and efficiency tests of machinery, boilers and engines.

The Two Year Course is offered to students who wish to become machinists, draughtsmen, or stationary engineers.

III. The Four Year Course in Mechanical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Free-hand Drawing, 131	2	--	--
Mechanical Drawing, 132	--	2	2
Wood-work, 136	1	1	1
Forge-work, 137	1	1	1
Mechanical Technology, 142	1	1	1
Algebra, 123	4	4	--
Geometry, 124	--	--	4
Physics, 156	2	2	2
English, 188	3	3	3
History, 194	2	2	2
Book-keeping, 129	1	1	1
Military Drill, 199	3	3	3

Sophomore Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Mechanical Drawing, 133	2	2	2
Forge-work, 138	1	--	--
Pattern-making, 139	--	1	1
Mechanical Processes, 143	1	1	1
Geometry, 124	4	--	--
Trigonometry, 125	--	4	4
Electricity and Magnetism, 157	2	2	2
Inorganic Chemistry, 181	3	3	3
Inorganic Chemistry (laboratory), 182	2	2	2
English, 189 and 191	2	2	2
Military Drill, 199	3	3	3

Junior Year.

Steam-engine, 144	2	2	2
Mechanics, 128	3	3	3
Machine Design, 134	2	2	2
Machinists' Work, 140	2	2	2
Analytical Geometry, 126	4	4	--
Calculus, 127	--	--	4
Dynamo Machinery, 161	2	2	2
English and History, 195 and 192	2	2	2
Military Tactics, 200	1	1	1
Military Drill, 199	3	3	3

Senior Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Mechanical Engineering (laboratory), 143	1	1	1
Machinists' Work, 141	3	3	2
Boiler and Engine Design, 135	3	4	4
Principles of Mechanism, 146	--	3	2
Industrial Chemistry, 183	--	--	2
Mechanics of Materials, 112	3	--	--
Boilers and Engines, 145	2	2	2
Calculus, 127	3	--	--
Hydraulics, 110	--	2	2
English or Political Economy, 192 and 190 or 197	2	2	2
Military Drill, 199	3	3	3

IIIa. The Two Year Course in Mechanic Arts.

First Year.

Free-hand Drawing, 131	2	--	--
Mechanical Drawing, 132	--	2	2
Wood-work, 136	2	2	2
Forge-work, 137	1	1	1
Arithmetic, 121	5	--	--
Algebra, 122	--	5	5
English, 187	3	3	3
History, 193	2	2	2
Mechanical Technology, 142	1	1	1
Military Drill, 199	3	3	3

Second Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Mechanical Drawing, 148	3	3	3
Machinists' Work, 101	3	3	3
Drawing, 109, or Machinists' Work, 141	4	4	4
Algebra, 123	4	4	--
Geometry, 124	--	--	4
Mechanical Technology, 149	2	2	2
Engines and Boilers, 150	2	2	2
Military Drill, 199	3	3	3

MECHANICAL ENGINEERING.

Equipment.

The drawing and recitation rooms, laboratory and shops of the Department of Mechanical Engineering are in the Engineering Building. They are of ample size and well lighted, and are arranged to be heated either by the exhaust steam from the engine or by live steam. On the first floor are a recitation room, engineering laboratory, machine shop, forge shop, wood-turning shop, and carpenter shop. On the second floor are the office, three drawing-rooms and a library. In the latter are kept on file various scientific and technical journals, the trade circulars of prominent engineering firms, drawings and photographs of machinery, and tabulated data, as well as a large number of engineering books, the use of which is required.

The laboratory is provided with the necessary apparatus for making boiler and engine tests and for other work of an experimental character. The equipment consists of a two horse-power engine, a ten horse-power engine (both of which were built by students), a twenty-five horse-power Woodbury engine, a large Wheeler surface condenser, connected with a $4\frac{1}{2} \times 6 \times 6$ Blake air-pump, an Ericsson hot-air pumping engine, apparatus for making analyses of flue gases, a fuel calorimeter, a large Sturtevant fan and engine, a small water motor, a Worthington water-meter, a complete Westinghouse air-brake equipment, a complete New York air-brake equipment, friction

brakes, weirs, indicators, planimeters, slide rules, thermometers, calorimeters, gauges, tanks, scales, a Crosby gauge tester, and other apparatus for making tests.

In addition to the laboratory, there is a boiler-house equipped with one thirty horse-power, and two forty horse-power horizontal return tubular boilers, and two seventy-five horse-power Babcock and Wilcox boilers, several pumps, and a jet condenser, all of which are available for experimental purposes.

The shops are equipped as follows:

The wood-working equipment consists of fifteen double carpenters' benches, which accommodate thirty students, and all necessary tools for each bench; thirty 12-inch turning lathes, each lathe being fully equipped with turning tools; a rip and a cut-off saw bench, foot-feed, with dado attachment; a double revolving rip and cut-off saw bench, with dado attachment; a 20-inch surface planer; a 12-inch hand-jointer or buzz planer; a universal boring machine; a 6½-inch tenoning machine with cope heads; a 6-inch sash and blind sticker; a 30-inch band saw; a large jig saw; a shaper or edge moulding machine, with a very complete set of moulding cutters; a 38-inch grindstone; a wood trimmer; an adjustable mitre-box; a steam glue-heater and a large assortment of screw and of bar clamps, both iron and wooden.

The forge shop is a well lighted and ventilated, neatly paved room, 30 x 40 feet. It is equipped with twenty-eight forges, blast being furnished from a Sturtevant blower; two emery and two buffing wheels; an overhead exhaust system, operated by a 60-inch Sturtevant exhaust fan, for removing smoke from the fires; anvils and all necessary hand tools.

The machine shop contains a 16-inch Davis and Eagan lathe with 10-foot bed, a 14-inch Windsor lathe with 5-foot bed, a 13-inch Barnes lathe with 5-foot bed, a 14-inch Putnam lathe with 4-foot bed, a 14-inch Flather lathe with 6-foot bed, three 14-inch lathes with 6-foot bed (built in the College shops by students), an 18-inch Prentiss shaper, a 24-inch upright Bickford drill press, a Brown and Sharp universal milling machine with all attachments, a 20-inch by 5-foot Pease planer, a large emery tool-grinding machine, a small emery tool-grinding machine, a 6-inch Curtis & Curtis pipe threading and cutting machine. The machines have full equipment of chucks, rests and tools. The benches are well provided with vises.

The tool-room is well equipped with the necessary hand and pipe tools.

The power for the shops is furnished by a twenty-five horse-power Woodbury engine. When the shops are running one of the students has charge of the engine.

Subjects of Instruction.

131. Free-hand Drawing.—Work in the use of the pencil; isometric sketches; technical sketches of objects, usually parts of a machine. Two periods, first term. Required of all Freshmen and first-year students in Mechanic Arts. Mr. GLENN.

132. Elementary Mechanical Drawing.—Use of instruments, geometric drawing, isometric drawing, elementary projections, drawings made to scale from working sketches of pieces of a machine. Two periods, second and third terms. Required of all Freshmen and first-year students in Mechanic Arts. Mr. GLENN.

133. Mechanical Drawing.—Working sketches and drawings of machine parts from the model. Tracing and blue-printing. Elementary machine design. Two periods. Required of Sophomores in Mechanical, Electrical and Mining Engineering. Mr. CHITTENDEN.

134. Machine Design.—Calculations and working drawings of machine parts, such as fastenings, shafting, hangers, couplings, bearings, belt and tooth gearing, pulleys and pipe couplings. Two periods. Required of Juniors in Mechanical Engineering. Mr. CHITTENDEN.

135. Boiler and Engine Design.—Calculations and working drawings of types of engines, boilers, pumps, condensers. Outline of power plant design. Three periods, first term. Four periods, second and third terms. Required of Seniors in Mechanical Engineering. Professor DICK.

136. Wood-work.—Use of bench tools, working from drawings, lining, sawing, planing. Practice in making simple exercises in wood. Elementary exercises in wood-turning. One period. Required of Freshmen. Two periods. Required of first-year students in Mechanic Arts. Mr. BRAGG and Mr. DEAL.

137. Forge-work.—Exercises in working with iron. Welding. Uses and care of forge tools and fires. One period. Required of Freshmen and first-year students in Mechanic Arts. Mr. DEAL.

138. Forge-work.—Exercises in working with steel. Tempering. Case-hardening. One period, first term. Required of Sophomores in Mechanical, Electrical and Mining Engineering. Mr. DEAL.

139. Pattern-making.—Exercise in making patterns of machine parts. One period, second and third terms. Required of Sopho-

mores in Mechanical, Electrical and Mining Engineering. Mr. BRAGG.

140. Machinists' Work.—Bench and machine-work. Exercises in chipping and filing. Exercises in lathe-work, boring, reaming, drilling, planing, milling and shaper-work. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Seven periods. Required of second-year students in Mechanic Arts. Mr. PARK.

141. Machinists' Work.—Making the parts of some machine, or of an engine. Making tools, such as taps and reamers. Laying out work. Three periods, first and second terms; two periods, third term. Required of Seniors in Mechanical Engineering. Mr. PARK.

142. Mechanical Technology.—Classification and uses of wood-working and forging tools and machines. Methods of wood-working and forging. Care of belting and shafting. One period. Required of Freshmen and of first-year students in Mechanic Arts. Mr. BRAGG.

143. Mechanical Processes.—Description of machines used in engineering work. Methods of pattern-making, moulding, casting and heavy forging. Description of various machine tools and methods of performing work on them; boiler-making and plate-work. One period. Required of Sophomores in Mechanical and Mining Engineering. Mr. CHITTENDEN.

144. Steam-engine.—Descriptive study of the simple steam-engine. Names and uses of the various parts of an engine. Various types of engines, fittings, foundations and piping. Different types of boilers and settings. Arrangement of power plants. Care of engines and boilers. Two periods. Required of Juniors in Mechanical and Mining Engineering. Two periods, first and second terms. Required of Seniors in Electrical Engineering. Professor DICK.

145. Boilers and Engines.—Description and theory of boilers and engines, valve gears. Elementary thermodynamics. Principles involved in engine and boiler design. Two periods. Required of Seniors in Mechanical Engineering. Professor DICK.

146. Principles of Mechanism.—Study of the communication of motion by gear-wheels, cams, screws, belts and link-work; automatic feed motions; epicyclic trains; parallel and quick return motions. Problems. Three periods, second term; two periods, third term. Required of Seniors in Mechanical Engineering. Professor DICK.

147. Mechanical Engineering Laboratory.—Practice in engine and boiler-running; valve-setting; calibration of instruments; testing gauges and lubricants. Use of indicators and calorimeters. Tests of

boilers and engines. One period. Required of Seniors in Mechanical Engineering. Professor DICK and Mr. CHITTENDEN.

148. Mechanical Drawing.—Sketching and drawing of machine parts and machines. Detail working drawings. Tracing and blue-printing. Three periods. Required of second-year students. Mr. DEAL.

149. Mechanical Technology.—Classification and use of hand-tools and machines usually found in the pattern shop, foundry, and machine shop. Materials used and methods of carrying on work in these shops. Practical problems in estimating cost and material required to complete a piece of work; arrangements and sizes of belting, pulleys and shafting. Two periods. Required of second-year students. Mr. CHITTENDEN.

150. Engines and Boilers.—Descriptive study of ordinary engines and boilers; proper methods of handling them. Care of pumps, condensers, engine and boiler fittings. Actual practice in engine-tending, boiler-firing, and dynamo-tending is also given with this course. Two periods. Required of second-year students. Mr. CHITTENDEN.

COURSE IN ELECTRICAL ENGINEERING.

Object.—The work in this department is designed for those who wish a thorough and practical training in Electrical Engineering. Only a most thorough training in the fundamental facts and principles of the science of electricity and magnetism will be satisfactory for a branch of engineering which is advancing so rapidly. A great deal of attention is, therefore, paid to good text-book work, and as soon as the first principles of the science are mastered by the student he is given a series of experiments in which careful measurements with exact instruments are made.

The department, as can be seen from the list of apparatus, is well equipped with dynamos, electric motors and testing instruments for experimental work and for investigation of problems in electrotechnics. During the Senior year a course in designing the various electrical machines is given.

IV. The Four Year Course in Electrical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Free-hand Drawing, 131	2	--	--
Mechanical Drawing, 132	--	2	2
Wood-work, 136	1	1	1
Forge-work, 137	1	1	1
Mechanical Technology, 142	1	1	1
Algebra, 123	4	4	--
Geometry, 124	--	--	4
Book-keeping, 129	1	1	1
Elementary Physics, 156	2	2	2
English, 188	3	3	3
History, 194	2	2	2
Military Drill, 199	3	3	3

Sophomore Year.

Mechanical Drawing 133	2	2	2
Geometry, 124	4	--	--
Trigonometry, 125	--	4	4
Inorganic Chemistry, 181	3	3	3
Inorganic Chemistry (laboratory), 182	2	2	2
Forge-work, 138	1	--	--
Pattern-making, 139	--	1	1
Physical Laboratory, 158	1	1	1
Electricity and Magnetism, 157	2	2	2
English, 189 and 191	2	2	2
Military Drill, 199	3	3	3

Junior Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Dynamo Machinery, 161	2	2	2
Electrical Laboratory, 159	2	--	--
Electrical Engineering (laboratory), 165	--	2	2
Machinists' Work, 140	2	2	2
Mechanics, 128	3	3	3
Analytical Geometry, 126	4	4	--
Calculus, 127	--	--	4
Machine Design, 134	2	2	2
English and History, 195 and 192	2	2	2
Military Tactics, 200	1	1	1
Military Drill, 199	3	3	3

Senior Year.

Alternating Currents, 162	3	--	--
Light and Power Plants, 163	--	3	--
Telephony and Telegraphy, 164	--	--	3
Electrical Engineering (laboratory), 166	3	4	4
Dynamo Design, 167	1	2	2
Steam-engine, 144	2	2	--
Mechanical Engineering (laboratory), 143	1	--	--
Industrial Chemistry, 183	--	--	2
Calculus, 127	3	--	--
Hydraulics, 110	--	2	2
Political Economy, 197	2	2	2
English Literature, 192 and 190	2	2	2
Military Drill, 199	3	3	3

PHYSICS.

Equipment.

The recitation rooms and laboratories of the Department of Physics are situated in the basement of the principal building. They are spacious and well lighted.

The equipment consists of apparatus for illustrating the principles of physical science and for instruction and practice in experiments, measurements and tests.

Subjects of Instruction.

156. Elementary Physics.—Properties of matter; fundamental units; British and metric standard measures; definitions of force, work and power; laws of motion; principles of machines; mechanics of fluids; heat; sound; introduction to the study of light. Two periods. Required of Freshmen. Professor WEIHE.

157. Elementary Lessons in Electricity and Magnetism.—Two periods. Required of Sophomores. Professor WEIHE.

158. Physical Laboratory.—Measurements of length, area and volume; determinations of density; laws of forces and velocities; pendulum. Two periods. Required of Sophomores in Electrical Engineering. Mr. ADAMS.

159. Electrical Laboratory.—Electric and magnetic measurements. Two periods, first term. Required of Juniors in Electrical Engineering. Mr. ADAMS.

ELECTRICAL ENGINEERING.

Equipment.

The electrical engineering laboratory is a small brick building 30 by 50. It contains the electric light plant, consisting of a 35-horse-power automatic Skinner engine, a 11.5 K. W. 110-volt Westinghouse dynamo and a 20 K. W. 2-phase 110-volt Lincoln alternator. The laboratory contains in addition to this one 6-light T. H. arc machine, one 1-horse-power Sprague motor, one 8 K. W. 110-volt Siemens & Halske dynamo, connected in such a way as to give 3-phase currents, one 2-horse-power 3-phase 110-volt Gen. Elect. Co. motor, one 2 K. W. 110-volt LaRoche alternator. It also contains transformers, condensers, arc lamps, circuit breakers, etc.

The department possesses a small library of standard books on all branches of physics and electrical engineering.

Subjects of Instruction.

161. Dynamo Machinery.—Dynamo-electric machines. Dynamos and motors. Efficiency. Characteristic curves. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Professor WEIHE.

162. Alternating Currents of Electricity.—Alternating current generators and motors. Static and rotary transformers. Condensers. Three periods, first term. Required of Seniors in Electrical Engineering. Professor WEIHE.

163. Electric Light and Power Plants.— Storage batteries. Transmission of electric power. Three periods, second term. Required of Seniors in Electrical Engineering. Professor WEIHE.

164. Telephony and Telegraphy.—Three periods, third term. Required of Seniors in Electrical Engineering. Professor WEIHE.

165. Electrical Engineering Laboratory.—Standardizing of measuring instruments. Measurements of power. Characteristic curves. Two periods, second and third terms. Required of Juniors in Electrical Engineering. Mr. ADAMS.

166. Electrical Engineering Laboratory.—Efficiency tests of direct and alternating current dynamos and motors and of transformers. Efficiency tests of electric plants. Photometry. Three periods, first term; four periods, second and third terms. Required of Seniors in Electrical Engineering. Mr. ADAMS.

167. Dynamo Design.—Design of dynamos, motors, and transformers. One period, first term; two periods, second and third terms. Required of Seniors in Electrical Engineering. Professor WEIHE and Mr. ADAMS.

COURSES IN MINING ENGINEERING.

The course in Mining Engineering is intended to give the student the preliminary training necessary to enable him to enter upon a career in mining. To this end he is given instruction in English, History, Political Economy, and Mathematics, which are fundamental to the more technical studies and to the greatest usefulness as a citizen. Instruction in Physics and Chemistry, Mineralogy and Geology, Surveying, Shop-work, Drawing, Machinery and Steam affords the scientific and engineering knowledge upon which the successful work of the miner must depend. The more technical portion of the instruction includes ore-dressing, metal-working, ventilation, drainage, and illumination of mines.

Students wishing to specialize in Metallurgy will please see Courses in Industrial Chemistry.

V. The Four Year Course in Mining Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Free-hand Drawing, 131	2	--	--
Mechanical Drawing, 132	--	2	2
Wood-work, 136	1	1	1
Forge-work, 137	1	1	1
Mechanical Technology, 142	1	1	1
Algebra, 123	4	4	--
Geometry, 124	--	--	4
Book-keeping, 129	1	1	1
Physics, 156	2	2	2
English, 188	3	3	3
History, 194	2	2	2
Military Drill, 199	3	3	3

Sophomore Year.

Mechanical Drawing, 133	2	2	2
Forge-work, 138	1	--	--
Pattern-making, 139	--	1	1
Mechanical Processes, 143	1	1	1
Geometry, 124	4	--	--
Trigonometry, 125	--	4	4
Electricity and Magnetism, 157	2	2	2
Inorganic Chemistry, 181	3	3	3
Inorganic Chemistry (laboratory), 182	2	2	2
English, 189 and 191	2	2	2
Military Drill, 199	3	3	3

Junior Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Geology, 176	2	2	2
Construction, 111	2	--	--
Graphic Statics, 101	--	2	2
Surveying, 102 and 103	2	2	2
Surveying (field work), 104	2	2	2
Mechanics, 128	3	3	3
Analytical Geometry, 126	4	4	--
Calculus, 127	--	--	4
English and History, 195 and 192	2	2	2
Military Tactics, 200	1	1	1
Military Drill, 199	3	3	3

Senior Year.

Mining, 171	--	3	3
Ore Dressing, 172	2	--	--
Metallurgy, 173	--	3	3
Mineralogy, 177	3	--	--
Assaying, 174	3	--	--
Electro-Chemistry, 175	--	3	3
Steam Engine, 144	2	2	2
Hydraulics, 110	--	2	2
Calculus, 127	3	--	--
English, 192 and 190	2	2	2
Political Economy, 197	2	2	2
Military Drill, 199	3	3	3

MINING AND METALLURGY.

171. Mining.—Lectures on methods of mining, including prospecting, sinking, stoping, hoisting, pumping, and ventilating; the location of mining claims, mine fires, fire-damp and dust explosions; inundations; rescue and relief of men. Three periods, second and third terms. For Seniors in Mining. Mr. PAGE.

172. Ore Dressing.—Furnishing products for metallurgical treatment. Lectures on concentrating machinery and concentrating and enriching ores by mechanical means. Two periods, first term. For Seniors in Mining. Mr. PAGE.

173. Metallurgy.—Introductory; combustion, calorific calculations, fuels, refractory materials, furnaces, etc. Iron and steel: the various iron and steel processes, metallography, heat-treatment, mechanical treatment, chemistry. Copper: roasting, smelting, refining, wet and electrolytic processes. Gold: stamp milling, amalgamation, cyanide and chlorination processes. The metallurgy of lead and the lesser metals. Three periods, second and third terms. For Seniors in Mining. Mr. PAGE.

184. Assaying.—Ricketts & Miller's *Notes on Assaying.* Lectures and laboratory practice in the crushing and sampling of ores; the assaying of gold, silver, lead and other ores; corrected assays; bullion assays; extraction tests. Three periods, first term. For Seniors in Mining. Mr. PAGE.

185. Electro-Chemistry and Electro-Metallurgy.— Study of the theory and applications of electrolysis and electrical heating; theory and practice of primary and secondary batteries; production, separation and purification of metals and chemicals. Lectures and laboratory practice. Three periods, second and third terms. For Seniors in Mining. Mr. PAGE.

GEOLOGY AND MINERALOGY.

176. Geology.—Tarr's *Elementary Geology.* During the first and second terms the general principles of Geology are studied with the minerals and rocks occurring in general formations. The study of the Geology of North Carolina is taken up during the third term and special emphasis is laid upon its economic aspect. Two periods. For Juniors in Mining. Mr. MORRISON.

177. Mineralogy.—Moses & Parsons' *Mineralogy.* Crystallography; determination of physical characters of crystals; descriptive and determinative mineralogy; blowpipe analysis and the study of

the more important economic minerals, their properties, uses and methods of determination. Lectures and laboratory practice. Three periods, first term. For Seniors in Mining. Mr. PAGE.

CHEMISTRY.

181. Inorganic Chemistry.—Remsen's *College Chemistry.* The common elements and their principal compounds are studied, together with some of the fundamental principles of the science. The lectures are illustrated by experiments and the exhibition of specimens. Three periods. Required of Sophomores. Professor WITHERS, Mr. PAGE, Mr. HASKELL and Mr. GARDNER.

182. Inorganic Chemistry.—Laboratory work. Remsen & Randall's *Laboratory Guide.* The student performs under the eye of the instructor experiments designed to illustrate and emphasize the work of the class-room. He records in a note-book his observations and the conclusions drawn from them. Two periods. Required of Sophomores. Mr. PAGE, Mr. HASKELL and Mr. GARDNER.

183. Industrial Chemistry.—A discussion of the materials of Engineering. Two periods, third term. Required of Seniors in Mechanical and Electrical Engineering. Professor WITHERS.

ENGLISH.

187. English Composition.—A drill upon the forms of the language, the correct relation of words, the sentence, the paragraph. Daily written exercises. Three periods. Required of first-year short course students. Mr. WILLIAMS and Doctor SUMMEY.

188. Introductory Composition and Rhetoric.—This course in the fundamentals of Rhetoric is made thoroughly practical. Students write instead of studying about how to write. The written work is accompanied by a steady drill upon grammatical forms, accuracy, and ease of expression. The student is taught to plan all work, and then to develop his plan in simple, idiomatic English. Three periods a week. Required of Freshmen. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

189. Rhetoric, Criticisms, Essays.—The student is taught the essentials of a good style by constant practice. Themes in narration, description, and exposition receive in this course especial attention. Required of Sophomores. Two periods, second term. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

190. Argumentation.—A study of the methods of our best speakers, followed by the laws of argumentation, and the writing of many exercises. Required of Seniors. Two periods, third term. Professor HILL.

191. American Literature.—By means of an introductory text and by much reading students are introduced to what is best in the literature of their own country. Books are studied at first hand. Synopses, paraphrases, and critiques required. Two periods, third term. Required of Sophomores. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

192. English Literature.—The development of English Literature through its great periods and through its representative men. Much parallel reading is required. In a general way Minto's plan of study is followed. Two periods, third term. Required of Juniors. Two periods, first and second terms. Required of all Seniors. Professor HILL.

HISTORY.

193. American History.—By means of a text-book supplemented by lectures and frequent assignment of topics for special study, students are in this course familiarized with the leading facts in the history of the United States. Two periods. Required of first-year students. Professor PHELPS.

194. Ancient and Modern History.—The student, by means of text-book and informal lectures, is introduced to the leading facts in the world's history, and to the significance and consequences of these facts. While historic sequence is carefully noted, the student follows, as far as possible, the topical method. Two periods. Required of all Freshmen. Professor PHELPS.

195. English History.—The first term of the Junior year is devoted to a study of English history. The text is supplemented by lectures on important periods. Two periods, first and second terms. Required of Juniors. Professor HILL.

POLITICAL ECONOMY.

197. Political Economy.—This course deals with public problems relating to the production, distribution, and exchange of wealth. The leading topics discussed are capital, wages, money, transportation, and taxation. Instruction is given by lectures and text-books. Two periods. Required of Seniors. President WINSTON.

MILITARY SCIENCE.

199. Drill.—Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies; Marches and Minor Tactics. United States Infantry Drill Regulations. Three hours in the afternoon. Required of all classes. Commandant and officers of the Battalion.

200. Tactics.—Theoretical instruction in the Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies, Manual of Guard Duty, Outposts, etc. One period. Required of Juniors. Captain PHELPS.

COURSES IN INDUSTRIAL CHEMISTRY.

VI. The Four Year Course in Industrial Chemistry.

COURSES IN CHEMISTRY.

In harmony with the general purposes for which the College was founded, the courses in chemistry are arranged to prepare young men for careers in the analytical or the operating departments of the various chemical industries. To this end the training given in general, organic, and analytical chemistry is supplemented by instruction in technical chemical analysis and in the applied chemical subjects bearing more directly on the course the student has selected. The fundamental principles of engineering, machinery, etc., which are almost indispensable to the successful management of chemical plants, are taught, together with the cultural studies included in the other courses.

Raleigh as a Chemical Center.

There are in the city of Raleigh and its vicinity several manufacturing plants to which, through the courtesy of the owners, the students in chemistry, in company with the teaching staff of the department, make visits each year. These include plants for the manufacture of illuminating gas, sulphuric acid, fertilizers, and artificial ice; for the extraction of cotton-seed oil; for the dyeing of cotton goods and for the tanning and dressing of leather.

The chemical laboratories of the North Carolina Department of Agriculture and of the North Carolina Agricultural Experiment Station are located in Raleigh, and through the courtesy of the officials in charge of these departments our students are welcomed whenever they desire to visit them.

The Berzelius Chemical Society—composed of the professional chemists residing in Raleigh and its vicinity—invites the students of this College to attend all meetings.

The State Museum is open to the public each day from 9 o'clock A. M. to 5 o'clock P. M., and among other things contains a very excellent collection of the State's minerals, ores, and building stones.

Chemical Equipment.

The laboratories of general and of analytical chemistry are located in the main building of the College, and are well furnished. The tables are of yellow heart pine, with oak tops. Each student is provided with water, gas, all necessary reagents, ample working space, together with lockers for the storage of apparatus, etc. The quantitative laboratory is located on the first floor and will accommodate thirty-two students. The laboratory for introductory chemical work is in the basement and will accommodate seventy students.

The chemical library is well supplied with reference books. It receives the leading chemical journals and owns complete sets of many of the most important of them.

Dyeing Department.

The dyeing department is located in the basement of the Textile Building and consists of an experimental dyeing laboratory with desk room sufficient for thirty students, a lecture-room, a stock-room, an office and a room 70 by 50 which is being fitted up as a practical dye-house.

The experimental laboratory is fitted out with apparatus for carrying out various chemical operations necessary for dyeing work and also for dyeing small test samples, color matching, etc.

The dye-house is fitted out with dyeing machinery, a steam kettle, a steaming box, a printing machine, a hydro-extractor and a drying closet.

Through the kindness of the following dye-stuff dealers the College has a collection of dye-stuffs amounting to approximately nine hundred samples. As each new dye is put out the department is regularly supplied with it, and the student thus has an opportunity of becoming familiar with the latest products for commercial work. The firms to whom the department is indebted in the past are as follows:

William J. Matheson & Co. (Ltd.), New York.
Farbenfabriken of Elberfeld Co., New York.
H. A. Metz & Co. (successors to Victor Koechl & Co.), New York.
Berlin Aniline Works, New York.
A. Klipstein & Co., New York.
C. Bischoff & Co., New York.
Kuttroff, Pickhardt & Co., New York.
New York and Boston Dyewood Co., New York.
Schoellkoff, Hartford & Hanna Co., Buffalo.

F. E. Atteaux & Co., Boston.
Read, Holliday & Sons (Ltd.), New York.
Société Anonyme des Matieres Colorantes, Paris.
O. S. Janney & Co., Philadelphia.
Geisenheimer & Co., New York.

Graduates in Chemistry.

The chemical graduates of the College are engaged in the following lines of chemical work: Manufacture of illuminating gas, manufacture of sulphuric acid, manufacture of fertilizers, manufacture of tobacco products, refining and testing of oils, metallurgy of iron, metallurgy of copper, dyeing of cotton goods, in agricultural experiment stations, in State departments of agriculture, and in teaching chemistry. These are employed in North Carolina and eight other States.

VI. The Four Year Course in Industrial Chemistry, leading to the degree of Bachelor of Science.

Freshman Year.

SUBJECTS.	PERIODS PER WEEK.*		
	1st Term.	2d Term.	3d Term.
Free-hand Drawing, 261†	2	--	--
Mechanical Drawing, 262	--	2	2
Wood-work, 264	1	1	1
Forge-work, 265	1	1	1
Mechanical Technology, 268	1	1	1
Algebra, 277	4	4	--
Geometry, 278	--	--	4
Book-keeping, 283	1	1	1
English, 287	3	3	3
History, 294	2	2	2
Physics, 251	2	2	2
Military Drill, 299	3	3	3

*The lecture and recitation periods are one hour; the laboratory, shop, and other practice periods, two hours.

†The figures immediately following the name of the study are given to aid one in finding readily a description of the subject. Under each department a number precedes the description of the study.

Sophomore Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Inorganic Chemistry, 226	3	3	3
Inorganic Chemistry (laboratory), 227	2	2	2
Electricity and Magnetism, 252	2	2	2
Physical Laboratory, 253	1	1	1
Mechanical Drawing, 263	2	2	2
Forge-work, 266	1	--	--
Pattern-making, 267	--	1	1
Geometry, 278	4	--	--
Trigonometry, 279	--	4	4
English, 288 and 290	2	2	2
Military Drill, 299	3	3	3

Junior Year.

Agricultural Chemistry, 232	2	2	2
Dyeing, 236	2	2	2
Dyeing Laboratory, 237	2	2	2
Organic Chemistry, 228	2	2	2
Analytical Chemistry (laboratory), 230	5	--	--
Technical Chemical Analysis, 231	--	5	5
Geology, 246	2	2	2
English and History, 295 and 291	2	2	2
Military Tactics, 300	1	1	1
Military Drill, 299	3	3	3

Senior Year.

GROUP A.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Industrial Chemistry, 233	2	2	2
Technical Chemical Analysis, 231	5	5	5
English, 291 and 289	2	2	2
Political Economy, 297	2	2	2
Military Drill, 299	3	3	3
Elective	6	6	6

GROUP B.

FOR STUDENTS WISHING TO SPECIALIZE IN DYEING.

Chemistry of Dye-stuffs, 238	--	2	2
Dyeing Laboratory, 239	--	4	4
Organic Chemistry (laboratory), 229	6	--	--
Industrial Chemistry, 233	2	2	2
Technical Chemical Analysis, 231	5	5	5
English, 291 and 289	2	2	2
Political Economy, 297	2	2	2
Military Drill, 299	3	3	3

GROUP C.

FOR STUDENTS WISHING TO SPECIALIZE IN METALLURGY.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Metallurgy, 241	--	3	3
Assaying, 242	3	--	--
Electro-Chemistry, 243	--	3	3
Mineralogy, 247	3	--	--
Industrial Chemistry, 233	2	2	2
Technical Chemical Analysis, 231	5	5	5
English, 291 and 289	2	2	2
Political Economy, 297	2	2	2
Military Drill, 299	3	3	3

CHEMISTRY.

226. Inorganic Chemistry.—Remsen's *College Chemistry.* The common elements and their principal compounds are studied, together with some of the fundamental principles of the science. The lectures are illustrated by experiments and the exhibition of specimens. Three periods. Required of Sophomores. Professor WITHERS and Mr. GARDNER.

227. Inorganic Chemistry.—Laboratory work. Remsen and Randall's *Laboratory Guide.* The student performs under the eye of the instructor experiments designed to illustrate and emphasize the work of the class-room. He records in a note-book his observations and the conclusions drawn from them. Two periods. Required of Sophomores. Mr. PAGE.

228. Organic Chemistry.—Remsen's *Introduction to the Study of the Compounds of Carbon.* The fundamental principles of organic chemistry and the more important compounds are studied. Two periods. For Juniors. Mr. HASKELL.

229. Organic Chemistry.—Laboratory work. Gattermann's *Practical Methods of Organic Chemistry,* translated by Shober. The typical transformations and syntheses of the aliphatic and aromatic groups are taken up. The student thus becomes familiar with the

reactions and properties of the more important organic compounds. Some of the common dye-stuffs are prepared synthetically. Six periods, first term. For Seniors. Mr. HASKELL.

230. Analytical Chemistry (Introductory).—Laboratory work. Talbot's *Quantitative Analysis.* The student is taught to detect the presence of the more common elements in unknown substances. He is given practice in introductory gravimetric and volumetric quantitative work. Six periods, first term. Required of Juniors. Mr. PAGE.

231. Technical Analysis.—Laboratory work. The work of the student is continued in quantitative analysis, special attention being given to the analysis of those substances most closely connected with the course of the student. Five periods, second and third terms. Required of Juniors. Five periods. Required of Seniors. Mr. PAGE.

232. Agricultural Chemistry.—Ingle's *Agricultural Chemistry.* A study of the facts obtained by the application of chemistry and chemical methods of investigation to agriculture. The laws of plant and animal nutrition, the economical feeding of plants and animals, and the maintenance of the fertility of the soil are considered from the chemical standpoint. Two periods. Required of Juniors. Professor WITHERS.

233. Industrial Chemistry.—Thorpe's *Outlines of Industrial Chemistry.* A discussion of the processes and principles involved in the more important chemical industries. A discussion of the materials of engineering. Two periods. Required of Seniors. Professor WITHERS.

DYEING.

236. Dyeing.—Lectures. Fraps' *Principles of Dyeing.* The textile fibres are studied. Special attention is paid to the cotton fibre, although the other fibres are studied to an extent sufficient to familiarize the student with their uses and applications. The steps necessary in preparing the fibres for dyeing, bleaching and scouring, etc., are taken up and then the application of each class of dyes to the different fibres. Typical dyes of each class are taken and studied. The student then takes up color matching, color mixing and dye testing; special attention being paid to these last courses. Finally the different methods of printing, dyeing mixed goods and mercerization are studied. Two periods. For Juniors. Mr. HASKELL.

237. Dyeing Laboratory.—The experiments are intended to follow the lecture course, thus making the student familiar by actual trial tests with facts brought out in the lectures. These tests are made with small skeins of yarn. The student learns the different methods of dyeing which are applicable to cotton, those which are applicable to wool, etc. Comparative tests as to fastness to washing, to light, to dilute acids, alkalies and to rubbing are made, and the samples showing each test are kept in a scrap-book. The different styles of printing are studied and special methods for dyeing. Two periods. For Juniors. Mr. HASKELL.

238. Chemistry of Dye-stuffs.—A study of the chemical composition of dye-stuffs with especial attention paid to their constitution and synthetical production. Two periods, second and third terms. For Seniors. Mr. HASKELL.

239. Dyeing Laboratory.—An advanced class in the study of the properties and modes of application of dye-stuffs and mordants, in which the student goes more into the details of the different steps of the processes. Four periods, second and third terms. For Seniors. Mr. HASKELL.

METALLURGY.

241. Metallurgy.—Introductory; combustion, colorific calculations, fuels, refractory materials, furnaces, etc. Iron and steel; the various iron and steel processes, metallography, heat treatment, mechanical treatment, chemistry. Copper; roasting, smelting, refining, wet and electrolytic processes. Gold; stamp milling, amalgamation, cyanide and chlorination processes. The metallurgy of lead and the lesser metals. Three periods, second and their terms. For Seniors. Mr. PAGE.

242. Assaying.—Ricketts & Miller's *Notes on Assaying.* Lectures and laboratory practice in the crushing and sampling of ores; the assaying of gold, silver, lead, and other ores; corrected assays; bullion assays; extraction tests. Three periods, first term. For Seniors. Mr. PAGE.

243. Electro-Chemistry and Electro-Metallurgy.—Study of the theory and applications of electrolysis and electrical heating; theory and practice of primary and secondary batteries; production, separation and purification of metals and chemicals. Lectures and laboratory practice. Three periods, second and third terms. For Seniors. Mr. PAGE.

GEOLOGY AND MINERALOGY.

246. Geology.—Tarr's *Elementary Geology.* During the first and second terms the general principles of geology are studied with the minerals and rocks occurring in general formations. The study of the geology of North Carolina is taken up during the third term and special emphasis is laid upon its economic aspect. Two periods. For Juniors. Mr. MORRISON.

247. Mineralogy.—Moses & Parson's *Mineralogy.* Crystallography; determination of physical characters of crystals; descriptive and determinative mineralogy; blow-pipe analysis and the study of the more important economic minerals, their properties, uses, and methods of determination. Lectures and laboratory practice. Three periods, first term. For Seniors. Mr. PAGE.

PHYSICS.*

251. Elementary Physics.—Properties of matter; fundamental units. British and metric standard measures; definitions of force, work and power; laws of motion; principles of machines; mechanics of fluids; heat; sound; introduction to the study of light. Two periods. Required of Freshmen. Professor WEIHE.

252. Elementary Lessons in Electricity and Magnetism.—Two periods. Required of Sophomores. Professor WEIHE.

253. Physical Laboratory.—Measurements of length, area and volume; determinations of density; laws of forces and velocities; pendulum. One period. Required of Sophomores. Mr. ADAMS.

254. Electrical Laboratory.—Electric and magnetic measurements. Two periods, first term. Elective for Seniors. Mr. ADAMS.

ELECTRICAL ENGINEERING.*

256. Dynamo Machinery.—Practical units. Dynamo-electric machines. Dynamos and motors. Efficiency. Characteristic curves. Two periods. Elective for Seniors. Professor WEIHE and Mr. ADAMS.

257. Electrical Engineering Laboratory.—Standardizing of measuring instruments. Measurements of power. Characteristic curves. Two periods, second and third terms. Elective for Seniors. Mr. ADAMS.

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* For full information, see course in Electrical Engineering.

MECHANICAL ENGINEERING.*

261. Free-hand Drawing.—Work in the use of the pencil; isometric sketches; technical sketches of objects, usually parts of a machine. Two periods, first term. Required of Freshmen and first-year students. Mr. GLENN.

262. Elementary Mechanical Drawing.—Use of instruments, geometric drawing, isometric drawing, elementary projections, drawings made to scale from working sketches of pieces of a machine. Two periods, second and third terms. Required of Freshmen and first-year students. Mr. GLENN.

263. Mechanical Drawing.—Working sketches and drawings of machine parts from the model. Tracing and blue-printing. Elementary machine design. Two periods. Required of Sophomores. Mr. CHITTENDEN.

264. Wood-work.—Use of bench tools, working from drawings, lining, sawing, planing. Practice in making simple exercises in wood. Elementary exercises in wood-turning. One period. Required of Freshmen. Mr. BRAGG.

265. Forge-work.—Exercises in working with iron. Welding. Uses and care of forge tools and fires. One period. Required of Freshmen. Mr. DEAL.

266. Forge-work.—Exercises in working steel. Tempering, case-hardening. One period, first term. For Sophomores. Mr. DEAL.

267. Pattern-making.—Exercises in making patterns of machine parts. One period, second and third terms. For Sophomores. Mr. BRAGG.

268. Mechanical Technology.—Classification and uses of wood-working and forging tools and machines; methods of wood-working and forging; care of belting and shafting. One period. Required of Freshmen. Mr. BRAGG.

269. Steam-engine.—Descriptive study of the simple steam-engine; names and uses of the various parts of an engine; various types of engines and fittings, foundations, and piping; different types of boilers and settings; arrangements of power plants; care of engines and boilers. Two periods. Elective for Seniors. Professor DICK.

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* For full information, see course in Mechanical Engineering.

BOTANY.

271. Elementary Botany.—Weekly lectures, accompanied by laboratory work and reference-reading regarding the algæ, fungi, ferns, and seed plants. Morphology is emphasized, and the broad principles of nutrition, reproduction, sex, adaptation, and evolution are illustrated. Particular consideration is given to the fungi and seed plants. The student's knowledge is made his own through field work and independent investigation. Three periods, first and second terms. Elective for Seniors. Professor STEVENS.

272. Systematic Botany and Ecology.—The student becomes acquainted with the principal orders and families of plants of North Carolina as well as with the general problems of plant classification. More attention is given to the grouping of plants into societies and to the study of plant variation and adaptation than to mere collecting and classifying. The principles of plant breeding, crossing, pollination, budding, and grafting are taught. Three periods, third term. Elective for Seniors. Professor STEVENS.

273. General Bacteriology.—Lectures and laboratory work on the nature, physiology, morphology, and economy of bacteria, with especial reference to home sanitation, disinfection, and to the relation of bacteria to disease in plants and animals. The student becomes familiar in the laboratory with methods of culture and investigation in bacteriology. Three periods. Elective for Seniors. Professor STEVENS.

MATHEMATICS.

277. Advanced Algebra.—Wells's *Higher Algebra*. Begins at quadratic equations; general theory of equations, solution of higher equations, etc. Four periods, first and second terms. Required of Freshmen. Mr. YATES and Mr. MACCALL.

278. Geometry.—Plane and Solid. Wentworth's *Plane and Solid Geometry*. Four periods, third term. Required of all Freshmen in full courses, and second-year students in Mechanic Arts. Four periods, first term. Required of Sophomores. Mr. YATES and Mr. MACCALL.

279. Trigonometry.—Four periods, second and third terms. Required of Sophomores. Mr. YATES.

280. Analytical Geometry.—Nichols's *Analytical Geometry*. Conic sections, higher plane curves, Geometry of three dimensions. Four periods, first and second terms. Elective for Seniors. Mr. YATES.

281. Calculus.—Osborne's *Elements of Calculus.* Differential and integral, elements of differential equations. Four periods, third term. Elective for Seniors. Professor RIDDICK.

282. Mechanics.—Nature and measurement of forces, moments, conditions of equilibrium, moment of inertia, laws of motion, constraining and accelerating forces, dynamics of a rigid body, momentum and impact, work, power, friction, application of principles to various engineering problems. Three periods. Elective for Seniors. Mr. LANG.

283. Book-keeping.—The work in the text-books supplemented by numerous original examples and sets for practice. One period. Required of Freshmen. Mr. MANN and Mr. MACCALL.

ENGLISH.

287. Introductory Composition and Rhetoric.—This course in the fundamentals of Rhetoric is made thoroughly practical. Students write instead of studying about how to write. The written work is accompanied by a steady drill upon grammatical forms, accuracy, and ease of expression. The student is taught to plan all work, and then to develop his plan in simple, idiomatic English. Three periods a week. Required of Freshmen. Professor HILL, Mr. WILLIAMS, and Doctor SUMMEY.

288. Rhetoric, Criticism, Essays.—The student is taught the essentials of a good style by constant practice. Themes in narration, description, and exposition receive in this course especial attention. Required of Sophomores. Two periods, second term. Professor HILL, Mr. WILLIAMS, and Doctor SUMMEY.

289. Argumentation.—A study of the methods of our best speakers, followed by the laws of argumentation, and the writing of many exercises. Required of Seniors. Two periods, third term. Professor HILL.

290. American Literature.—By means of an introductory text and by much reading students are introduced to what is best in the literature of their own country. Books are studied at first hand. Synopses, paraphrases and critiques required. Two periods third term. Required of Sophomores. Professor HILL, Mr. WILLIAMS, and Doctor SUMMEY.

291. English Literature.—The development of English Literature through its great periods and through its representative men. Much parallel reading is required. In a general way Minto's plan of

study is followed. Two periods, third term. Required of Juniors. Two periods, first and second terms. Required of Seniors. Professor HILL.

HISTORY.

294. Ancient and Modern History.—The student, by means of text-book and informal lectures, is introduced to the leading facts in the world's history, and to the significance and consequences of these facts. While historic sequence is carefully noted, the student follows, as far as possible, the topical method. Two periods. Required of all Freshmen. Professor PHELPS.

295. English History.—The first term of the Junior year is devoted to the study of English History. The text is supplemented by lectures on important periods. Two periods, first and second terms. Required of Juniors. Professor HILL.

POLITICAL ECONOMY.

297. Political Economy.—This course deals with public problems relating to the production, distribution, and exchange of wealth. The leading topics discussed are capital, wages, money, transportation, and taxation. Instruction is given by lectures and text-books. For Seniors. Two periods. President WINSTON.

MILITARY SCIENCE.

299. Drill.—Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies; Marches and Minor Tactics. United States Infantry Drill Regulations. Three hours in the afternoon. Required of all classes. Commandant and officers of the Battalion.

300. Tactics.—Theoretical instruction in the Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies; Manual of Guard Duty; Outposts, etc. One period. Required of Juniors. Captain PHELPS.

TEXTILE COURSES.

VII. The Four Year Course in Textile Industry.
VIIa. The Two Year Course in Textile Industry.

THE TEXTILE DEPARTMENT.

The Textile Department is located in a new building recently erected for its use. The instruction given in this department is in the theory and practice of cotton manufacturing. The building, which is a typical cotton mill, is fully equipped with all the necessary machinery for manufacturing cotton yarns and fabrics from the bale to the finished product. The student is taught the theory of cotton spinning, weaving, designing, and dyeing. In connection with the theory, he learns the practical operation of the cotton machinery used in carrying out the different processes. Further, he learns such essential practical details as enable him to adjust and fix the machinery so as to produce the proper results. As a result of this training, each student produces, for himself, cotton yarns of different numbers, cotton fabrics of different kinds from his own designs and choice of colors.

TEXTILE INSTRUCTION.

In this department two courses of instruction are offered, the Four Year Course, leading to the degree of Bachelor of Engineering, and the Short Course. The Four Year Course combines with the textile instruction certain practical and theoretical subjects which enable the student to understand better his special work. The textile instruction begins in the Sophomore year and is the principal work of the Junior and Senior years. The Short Course is offered to those mature students who cannot spend the time required for the Four Year Course. To be successful in the Short Course the student should have had a good preparation in his early studies, especially in mathematics, and some practical experience. To enter this course the student is required to pass the full entrance examinations for the Freshman Class in College, and must satisfy the professor in charge of his ability to go on with the work. Combined with the textile instruction

are certain practical subjects which aim to increase the skill of the student.

The textile instruction given is of a practical nature, and covers the entire ground of cotton manufacturing. Its object is to prepare the student for a useful career in this industry. There is a demand from the mills in this and other States for young men technically trained in the manufacture of cotton goods, especially of the finer grades. That the graduates are meeting with sucess in this industry is shown by the positions held by them. Among these are president, secretary and treasurer, manager, superintendent, designer, overseer of weaving, mill architect, machinery salesman. In fact, the graduates have gone into almost every branch of cotton manufacturing, and have met with success. All have received the same training; the point to which each has advanced has depended upon the ability to deal with the general problems of manufacturing.

TEXTILE BUILDING AND EQUIPMENT.

The Textile Building is located on the west campus, just beyond the Horticultural Building. It is a two-story brick building 125x75 feet, with a basement, erected from the plans of The D. A. Tompkins Co., Charlotte, N. C. Throughout, its construction is similar to a cotton mill, being an illustration of standard construction in this class of buildings. The basement is fitted up with a laboratory and class-room for instruction in dyeing and with dyeing machinery. On the first floor are located the hand and power looms and the necessary warp-preparation machinery. The carding and spinning machinery is located on the second floor. Electricity is used as motive power, the machinery of each department in the building being driven by a separate motor. The machinery equipment consists of the latest types of cotton mill machinery manufactured by American builders. The following is a list of the machines and their makers:

Carding Department.

Opening-room.—One combination opener and breaker lapper, made by Kitson Machine Co., Lowell, Mass. One 40-inch single beater finisher lapper, with patent carding beater, made by Kitson Machine Co., Lowell, Mass.

Carding-room.—One 40-inch revolving flat card, 112 flats, with coiler, made by Mason Machine Works, Taunton, Mass. One 40-inch revolving flat card, 110 flats, with coiler, made by Whitin Machine

Works, Whitinsville, Mass. One 40-inch revolving flat card, 110 flats, with coiler, made by Saco and Pettee Machine Shops, Newton Upper Falls, Mass. One single railway head, with coiler, leather rolls, made by Whitin Machine Works, Whitinsville, Mass. One drawing frame, four deliveries, leather rolls, made by Whitin Machine Works, Whitinsville, Mass. One railway head with coiler, metallic rolls, and improved evener motion, made by Saco and Pettee Machine Shops, Newton Upper Falls, Mass. One drawing frame, four deliveries, metallic rolls, made by Saco and Pettee Machine Shops, Newton Upper Falls, Mass. One 36-spindle slubber for 11x5½-inch bobbin, with ball-bearing top rolls, made by Woonsocket Machine and Press Co., Woonsocket, R. I. One 48-spindle intermediate roving frame for 9x4½-inch bobbin, made by Saco and Pettee Machine Shops, Biddeford, Me. One 64-spindle fine roving frame for 7x3½-inch bobbin, with ball-bearing top rolls, made by Woonsocket Machine and Press Co., Woonsocket, R. I. One 80-spindle jack roving frame for 6x2½-inch bobbin, with ball-bearing top rolls, made by Woonsocket Machine and Press Co., Woonsocket, R. I.

Spinning Department.

Spinning-room.—One 64-spindle spinning frame for warp; one 80-spindle spinning frame for filling, made by Whitin Machine Works, Whitinsville, Mass. One 80-spindle spinning frame for warp; one 80-spindle spinning frame for filling, made by Mason Machine Works, Taunton, Mass. One 80-spindle spinning frame for warp; one 80-spindle spinning frame for filling, made by Fales & Jenks Machine Co., Pawtucket, R. I. One 64-spindle spinning frame for warp; one 64-spindle spinning frame for filling, made by Saco and Pettee Machine Shops, Biddeford, Me.

Spooling, Twisting, and Winding.—One 40-spindle spooler, made by Draper Company, Hopedale, Mass. One 40-spindle spooler, made by Whitin Machine Works, Whitinsville, Mass. One 32-spindle spooler, made by Easton & Burnham, Pawtucket, R. I. One 48-spindle twister, male by Whitin Machine Works, Whitinsville, Mass. One 72-spindle twister, one-half for wet, one-half for dry twisting, made by Draper Company, Hopedale, Mass. One 48-spindle twister, one-half for wet, one-half for dry twisting, made by Fales & Jenks Machine Co., Pawtucket, R. I. One 50-spindle reel, one-half live, one-half dead spindles, made by D. A. Tompkins Co., Charlotte, N. C. One 50-spindle reel, made by Draper Company, Hopedale, Mass. One

6-spindle universal winding machine, made by Universal Winding Co., Boston, Mass. One section warper, 400 ends, made by Draper Company, Hopedale, Mass.

Weaving Department.

Warp Preparation.—One 12-spindle bobbin winding machine, made by Jacob K. Altemus, Philadelphia, Pa. One beaming machine, made by Lewiston Machine Co., Lewiston, Me. One beaming machine complete, made by The T. C. Entwistle Co., Lowell, Mass.

Looms.—One Northrop-Draper print-cloth loom; one Northrop-Draper sateen loom; one Northrop-Draper loom with 20-harness dobby, made by Draper Company, Hopedale, Mass. Two high-speed sheeting looms, made by Kilburn & Lincoln, Fall River, Mass. One sheeting loom, one 12-harness dobby loom, made by Whitin Machine Works, Whitinsville, Mass. One print-cloth loom; one 2x1 box loom; one 24-harness dobby loom, made by Mason Machine Works, Taunton, Mass. One Crompton 4x1 box gingham loom; one Crompton 4x1 box loom with 20-harness dobby; one Crompton single box loom with 400 hook Jacquard machine; one Knowles Gem loom with 4x4 box; one Stafford single box loom with 20-harness dobby, made by Crompton & Knowles Loom Works, Worcester, Mass.

Dyeing Department.

The dyeing department is located in the basement of the Textile building, and consists of an experimental dyeing laboratory with desk room sufficient for thirty students, a lecture-room, a stock-room, an office and a room 70x50 feet, which is being fitted up as a practical dye-house.

The experimental laboratory is fitted out with apparatus for carrying out various chemical operations necessary for dyeing work and also for dyeing of small test samples, color-matching, etc. The dye-house is fitted out with dyeing machinery, a steam kettle, a steaming box, a printing machine, a hydro extractor and a drying closet.

Through the kindness of the following dye-stuff dealers the College has a collection of dye-stuffs amounting to approximately nine hundred samples. As each new dye is put out the department is regularly supplied with it, and the student thus has an opportunity of becoming familiar with the latest products for commercial work.

The firms to whom the department is indebted in the past are as follows:

Wm. J. Matheson & Co., Ltd., N. Y.
Farbenfabriken of Elberfeld Co., N. Y.
H. A. Metz & Co., N. Y. (successors to Victor Koechl & Co.).
Berlin Analine Works, N. Y.
A. Klepstein & Co., N. Y.
C. Bischoff & Co., N. Y.
Kuttroff, Pickhardt & Co., N. Y.
New York and Boston Dyewood Co., N. Y.
Schoellkoff, Hartford & Hanna Co., Buffalo, N. Y.
F. E. Atteaux & Co., Boston, Mass.
Read, Holliday & Sons, Ltd., N. Y.
Societe Anonyme des Matieres, Colorantes, Paris.
O. S. Janney & Co., Philadelphia.
Geisenheimer & Co., N. Y.

Power and Power Transmission.

One 30-horse-power 3-phase 550-volt motor, made by General Electric Co., for driving carding and spinning machinery.

One 15-horse-power 3-phase 550-volt motor, made by General Electric Co., for driving weaving machinery.

Pulleys, shafting, hangers, and couplings, made by Jones & Laughlins, Ltd., Pittsburg, Pa.

Belting, made by Faerweather & Ladew, New York City, and Maloney-Bennett Belting Co., Chicago, Ill.

Heating Plant.

Steam Coils and Blowing Fan, made by B. F. Sturtevant Co., Boston, Mass.

VII. The Four Year Course in Textile Industry, leading to the degree of Bachelor of Engineering.

Freshman Year.

SUBJECTS.	PERIODS PER WEEK.*		
	1st Term.	2d Term.	3d Term.
Free-hand Drawing, 316†	2	--	--
Mechanical Drawing, 317	--	2	2
Wood-work, 319	1	1	1
Forge-work, 320	1	1	1
Mechanical Technology, 323	1	1	1
Algebra, 336	4	4	--
Geometry, 337	--	--	4
Book-keeping, 339	1	1	1
Elementary Physics, 331	2	2	2
English, 341	3	3	3
History, 346	2	2	2
Military Drill, 349	3	3	3

Sophomore Year.

Carding and Spinning, 301	2	2	2
Mechanical Drawing, 318	2	2	2
Electricity and Magnetism, 332	2	2	2
Geometry, 337	4	--	--
Trigonometry, 338	--	4	4
Inorganic Chemistry, 311	3	3	3
Inorganic Chemistry (laboratory), 312	2	2	2
English, 342 and 344	2	2	2
Military Drill, 349	3	3	3

* The lecture and recitation periods are one hour; the laboratory, shop, and other practice periods, two hours.

† The figures immediately following the name of the study are given to aid one in finding readily a description of the subject. Under each department a number precedes the description of the study.

Junior Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Carding and Spinning, 301	3	3	3
Weaving, 302	3	3	3
Textile Designing, 303	3	3	3
Dyeing, 306	2	2	2
Dyeing (laboratory), 307	2	2	2
Organic Chemistry, 313	2	2	2
English and History, 347 and 345	2	2	2
Military Tactics, 350	1	1	1
Military Drill, 349	3	3	3

Senior Year.

Carding and Spinning, 301	4	4	4
Weaving, 302	4	4	4
Textile Designing, 303	3	3	3
Steam-engine, 325	2	2	2
English, 345 and 343	2	2	2
Political Economy, 348	2	2	2
Military Drill, 349	3	3	3

VIIa. The Two Year Course in Textile Industry.

First Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Carding and Spinning, 301	3	3	3
Weaving, 302	3	3	3
Textile Designing, 303	3	3	3
Free-hand Drawing, 316	2	--	--
Mechanical Drawing, 317	--	2	2
Wood-work, 319	1	1	1
Forge-work, 320	1	1	1
Mechanical Technology, 323	1	1	1
English, 341	3	3	3
Military Drill, 349	3	3	3

Second Year.

Carding and Spinning, 301	4	4	4
Weaving, 302	4	4	4
Textile Designing, 303	3	3	3
Mechanical Drawing, 318	2	2	2
Forge-work, 321	1	--	--
Pattern-making, 322	--	1	1
Mechanical Processes, 324	1	1	1
English, 342 and 344	2	2	2
Military Drill, 349	3	3	3

Description of Subjects.

301. Carding and Spinning.—Lectures and recitations; practice in operating card and spinning-room machinery. Cotton; classifying the plant, its growth; varieties; ginning; baling and marketing the raw staple. Cotton at the mill; selecting and mixing. Openers and lappers; cards; railway-heads; drawing-frames; slubbers; intermediates; speeders; jacks. Ring spinning-frames and mules. Spoolers and warpers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts; speed of parts; production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity. Required of Sophomores, Juniors and Seniors in the full course and of first and second-year students in the short course. Professor WILSON.

302. Weaving.—Lectures and practice in warp preparation, operating and fixing looms, cloth finishing machinery. Warp preparation; pin frame warper; section warper; beam warper; construction of beam warper, stop motion, measuring motion, creel; pattern warp making; long and short chain beamers. Slashing; steam cylinder slasher; hot air slasher; construction of slasher; creel; cylinders; immersion roll; squeeze rolls; drying fan; separator rolls; winding yarn on beam; cone drive; slow motion; measuring and cut marking motion. Sizing; construction of size kettle; size mixing and boiling; division of sizing ingredients; values of ingredients; size receipts for light, medium, and heavy sizing. Loom-mounting: reeds and harnesses; drawing in; and putting warps in looms. Looms: construction of plain loom; principal movements in weaving; let-off and take up motions; filling stop motion; warp stop motion. Cams and their construction. Magazine looms: construction and advantages. Drop box looms; chain building for box looms; changing boxes to have easy running loom; construction and value of multipliers; timing and fixing box motions. Pick and pick-looms. Box-chain, and multiplier-chain building, arranging colors in boxes; raising and lowering boxes to give easy running loom. Ball and shoe pick motion. Construction and fixing of head motion. Dobby; single and double action; construction and fixing of dobby; dobbies with extra appliances necessary for weaving leno, towel, and other pile fabrics. Value of easers; half-motion; and jumper attachment for leno. Springs and spring-boxes. Negative and positive head motions. Pattern chain building. Jacquard, single and double lift; construction

and tie up. Weave-room calculations: speed and production calculations; relative speed of looms; counts of cotton harness. Finishing: inspection of cloth; singeing and brushing; calendering; tentering; folding and packing for the market. Equipment necessary for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Required of Juniors and Seniors in the Four Year Course and of first and second-year students in the Short Course. Mr. NELSON.

303. Textile Designing.—Lectures and practice in designing, fabric structure and cloth analysis. Designing: method of representing weaves on design paper. Foundation weaves; plain; twill; satin. Ornamentation of plain weave; color effects on plain weave. Derivative weaves; plain and fancy basket weaves; warp and filling rib weaves. Broken twills; curved twills; corkscrew twills; entwining twills. Granite weaves; satin shading. Combination of weaves; figured weaving on plain ground. Fancy satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno; honey-comb weaves. Bedford cords and combinations with other weaves. Wave designs; pointed twills; diamond effects. Plain and fancy piques. Double plain; figured double plain. Double cloths. Cloths backed with warp; cloths backed with filling. Cloths ornamented with extra warp; cloths ornamented with extra filling. Cotton velvet. Corduroy. Matelasse. Leno weaves with one, two, and more sets of doups. Principles of working both top and bottom doups. Combination of plain and fancy weaves with leno. Methods of obtaining leno patterns. Jacquards. Distribution and setting out of figures for geometrical and floral effects. Distributing figures to prevent lines. Areas of patterns. Preparation of sketches. Transfer of sketches to design paper. Painting in the design with different weaves according to sketch. Shading of patterns. Card cutting and lacing. Fabric structure: textile calculations. Determining the number of threads and picks per inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Cloth analysis. Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities of warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight

of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woolen; worsted; silk; linen, and cotton yarns. Determination of one system of yarn to that of another. Required of Juniors and Seniors in the Four Year Course, and of first and second-year students in the Short Course. Mr. NELSON.

DYEING.*

306. Dyeing.—Lectures. Fraps' *Principles of Dyeing.* The textile fibres are studied. Special attention is paid to the cotton fibre, although the other fibres are studied to an extent sufficient to familiarize the student with their uses and applications. The steps necessary in preparing the fibres for dyeing, bleaching and scouring, etc., are taken up and then the application of each class of dyes to the different fibres. Typical dyes of each class are taken and studied. The student then takes up color-matching, color-mixing and dye-testing. Special attention being paid to these last courses. Finally the different methods of printing, dyeing mixed goods and mercerization are studied. Two periods. For Juniors. Mr. HASKELL.

307. Dyeing Laboratory.—The experiments are intended to follow the lecture course, thus making the student familiar by actual trial tests with facts brought out in the lecture. These tests are made with small skeins of yarn. The student learns the different methods of dyeing which are applicable to cotton, those which are applicable to wool, etc. Comparative tests as to fastness of washing, to light, to dilute acids, alkalies, and to rubbing are made, and the samples showing each test are kept in a scrap-book. The different styles of printing are studied and special methods for dyeing. Two periods. For Juniors. Mr. HASKELL.

CHEMISTRY.*

311. Inorganic Chemistry.—Remsen's *College Chemistry.* The common elements and their principal compounds are studied, together with some of the fundamental principles of the science. The lectures are illustrated by experiments and the exhibition of specimens. Three periods. Required of Sophomores. Professor WITHERS and Mr. PAGE.

* For further information, see courses in Industrial Chemistry.

312. Inorganic Chemistry.—Laboratory work. Remsen and Randall's *Laboratory Guide*. The student performs, under the eye of the instructor, experiments designed to illustrate and emphasize the work of the class-room. He records in a note-book his observations and the conclusions drawn from them. Two periods. Required of Sophomores. Mr. GARDNER.

313. Organic Chemistry.—Remsen's *Introduction to the Study of the Compounds of Carbon*. The fundamental principles of organic chemistry and their more important compounds are studied. Special attention is devoted to that part of the subject which bears more directly upon the dye-stuffs. Two periods. For Juniors. Mr. HASKELL.

MECHANICAL ENGINEERING.*

316. Free-hand Drawing.—Work in the use of the pencil; isometric sketches; technical sketches of objects, usually parts of a machine. Two periods, first term. Required of Freshmen and first-year students. Mr. GLENN.

317. Elementary Mechanical Drawing.—Use of instruments; geometric drawing; isometric drawing; elementary projections; drawings made to scale from working sketches of pieces of a machine. Two periods, second and third terms. Required of Freshmen and first-year students. Mr. GLENN.

318. Mechanical Drawing.—Working sketches and drawing machine parts from the models; tracing and blue-printing; elementary machine design. Two periods. Required of Sophomores. Mr. CHITTENDEN.

319. Wood-work.—Use of bench tools; working from drawings, lining, sawing planing; practice in making simple exercises in wood-turning. One period. Required of Freshmen. Mr. BRAGG.

320. Forge-work.—Exercises in working with iron, welding; uses and care of forge-tools and fires. One period. Required of Freshmen. Mr. DEAL.

321. Forge-work.—Exercises in working with steel; tempering; case-hardening. One period, first term. Required of Sophomores and second-year students. Mr. DEAL.

322. Pattern-making.—Exercises in making patterns, generally of machine parts. One period, second and third terms. Required of Sophomores and second-year students. Mr. BRAGG.

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* For full information, see course in Mechanical Engineering.

323. Mechanical Technology.—Classification and uses of wood-working and forging tools and machines; principles of correct methods of wood-working and forging; care of belting and shafting. One period. Required of Freshmen. Mr. BRAGG.

324. Mechanical Processes.—Description of machines used in engineering work; methods of pattern-making; moulding, casting and heavy forging; description of various machine tools and methods of performing work on them; boiler-making and plate-work. One period. Required of second-year students. Mr. CHITTENDEN.

325. Steam-engine.—Descriptive study of the simple steam-engine; names and uses of the various parts of an engine; various types of engines and fittings, foundations, and pipings; different types of boilers and setting; arrangement of power plants; care of engines and boilers. Two periods. Required of Seniors. Professor DICK.

PHYSICS.*

331. Elementary Physics.—Properties of matter; fundamental units; British and metric standard measures; definitions of force, work, and power; laws of motion; principles of machines; mechanics of fluids; heat; sound; introduction to the study of light. Two periods. Required of Freshmen. Professor WEIHE.

332. Elementary Lessons in Electricity and Magnetism.—Two periods. Required of Sophomores. Professor WEIHE.

MATHEMATICS.†

336. Advanced Algebra.—Begins at quadratic equations; general theory of equations; solution of higher equations, etc. Wells's *Higher Algebra*. Four periods, first and second terms. Required of Freshmen. Mr. YATES and Mr. MACCALL.

337. Geometry.—Plane and solid. Wentworth's *Plane and Solid Geometry*. Four periods, third term. Required of Freshmen. Four periods, first term. Required of Sophomores. Mr. YATES.

338. Trigonometry.—Four hours, second and third terms. Required of Sophomores. Mr. YATES.

339. Book-keeping.—The work of the text-books supplemented by numerous original examples and sets for practice. One period. Required of Freshmen. Mr. MANN and Mr. MACCALL.

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* For full information, see course in Electrical Engineering.

† For full information, see course in Civil Engineering.

ENGLISH.

341. Introductory Composition and Rhetoric. —This course in the fundamentals of Rhetoric is made thoroughly practical. Students write instead of studying about how to write. The written work is accompanied by a steady drill upon grammatical forms, accuracy, and ease of expression. The student is taught to plan all work, and then to develop his plan in simple, idiomatic English. Three periods a week. Required of Freshmen. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

342. Rhetoric, Criticisms, Essays.—The student is taught the essentials of good style by constant practice. Themes in narration, description, and exposition receive in this course especial attention. Required of Sophomores. Two periods, second term. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

343. Argumentation.—A study of the methods of our best speakers, followed by the laws of argumentation, and the writing of many exercises. Required of Seniors. Two periods, third term. Professor HILL.

344. American Literature.—By means of an introductory text and by much reading students are introduced to what is best in the literature of their own country. Books are studied at first hand. Synopses, paraphrases, and critiques required. Two periods, third term. Professor HILL, Mr. WILLIAMS and Doctor SUMMEY.

345. English Literature.—The development of English Literature through its great periods and through its representative men. Much parallel reading is required. In a general way Minto's plan of study is followed. Two periods, third term. Required of Juniors. Two periods, first and second terms. Required of Seniors. Professor HILL.

HISTORY.

346. Ancient and Modern History.—The student, by means of text-book and informal lectures, is introduced to the leading facts in the world's history, and to the significance and consequences of these facts. While historic sequence is carefully noted, the student follows, as far as possible, the topical method. Two periods. Required of all Freshmen. Professor PHELPS.

347. English History.—The first term of the Junior year is devoted to a study of English history. The text is supplemented by lectures on important periods. Two periods, first and second terms. Required of all Juniors. Professor HILL.

POLITICAL ECONOMY.

348. Political Economy.—This course deals with public problems relating to the production, distribution, and exchange of wealth. The leading topics discussed are capital, wages, money, transportation, and taxation. Instruction is given by lectures and text-books. Two periods. Required of Seniors. President WINSTON.

MILITARY SCIENCE.

349. Drill.—Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies; Marches and Minor Tactics. United States Infantry Drill Regulations. Three hours in the afternoon. Required of all classes. Commandant and officers of the Battalion.

350. Tactics.—Theoretical instruction in the Schools of the Soldier; Company and Battalion in Close and Extended Order; Ceremonies; Manual of Guard Duty; Outposts, etc. One period. Required of Juniors. Captain PHELPS.

NORMAL COURSES.

I. For Rural Teachers:

(a) Two Year Course.

(b) One Year Course.

(c) Summer Course.

II. For City Teachers:

(a) Two Year Course.

(b) One Year Course.

(c) Summer Course.

The Normal Courses are intended for the education of teachers, both men and women, chiefly along industrial lines. Industrial education is being introduced into our public schools, and the College has a constant demand for well trained industrial teachers. It is hoped by means of the Normal Courses to help supply this demand. Our School Law already requires agriculture to be taught in the public schools, and manual work will doubtless be added.

The Courses for Rural Teachers are devoted largely to agriculture and nature study; the Courses for City Teachers, to drawing and manual training. Each of these courses also includes a review of other public school studies.

Persons already engaged in teaching may, at slight expense of time and money, by means of the short courses or the Summer Courses, make themselves proficient in one or more industrial lines. Persons preparing to teach may take the full courses, and thus become proficient not only along industrial lines but also in the other public school branches and in one or more sciences, or in higher Mathematics and English. The industrial training given is both practical and theoretical, and is arranged with reference to the present needs of the public schools in North Carolina. The expenses in the Normal Courses are the same as in the other courses of the colleges, except in the Summer Courses.

The Normal Courses are as follows:

I. Courses for Rural Teachers.

(a) TWO YEAR COURSE.

First Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Agriculture	3	3	3
Nature Study { Plants	3	3	3
Nature Study { Animals	3	3	3
English	3	3	3
Mathematics	5	5	5
Agricultural Chemistry	2	2	2
Military Drill	3	3	3

Second Year.

Farm Equipment	4	--	--
Soils	--	4	--
Crops	--	--	4
Plant Diseases	3	--	--
Physics	--	3	--
Botany	--	--	3
Mathematics	4	4	4
English	3	3	3
Drawing	2	2	2
History	2	2	2
Military Drill	3	3	3

(b) ONE YEAR COURSE.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Agriculture	3	3	3
Farm Equipment, Soils and Crops	4	4	4
Nature Study	3	3	3
Mathematics	4	4	4
English	3	3	3
Agricultural Chemistry	2	2	2
Military Drill	3	3	3

(c) SUMMER COURSE.

SEE ANNOUNCEMENT OF SUMMER SCHOOL BELOW.

II. Courses for City Teachers.

(b) TWO YEAR COURSE.

First Year.

Drawing	2	2	2
Wood-work	1	1	1
Forge-work	1	1	1
Mechanical Technology	1	1	1
Algebra and Geometry	4	4	4
English	3	3	3
History	2	2	2
Drill	3	3	3

Elective, 3 periods required: Physics 2, Nature Study (Plants) 3, Nature Study (Animals) 3, Book-keeping 1.

Second Year.

SUBJECTS.	PERIODS PER WEEK.		
	1st Term.	2d Term.	3d Term.
Drawing	2	2	2
Wood-work	4	4	4
Forge-work	1	1	1
English	2	2	2
Architectural and Descriptive Geometry	2	2	2
Architectural Drawing	2	2	2
Geometry and Trigonometry	4	4	4
Drill	3	3	3

Elective, at least 2 periods required: Chemistry 3, Chemical Laboratory 2, Electricity and Magnetism 2, Descriptive Geometry 2, Plant Diseases, Human Physiology, Physiological Botany 3.

(b) ONE YEAR COURSE.

Drawing	3	4	4
Wood-work	4	5	5
Forge-work	2	2	2
Architecture	2	--	--
Architectural Drawing	2	2	2
Algebra and Geometry	4	4	4
Drill	3	3	3

Elective: Physics 2, English (132) 3, English (133 and 135) 2, History 2, Nature Study (Plants) 3, Nature Study (Animals) 3, Book-keeping 1, Chemistry 3, Chemical Laboratory 2, Electricity and Magnetism 2, Plant Diseases 3, Human Physiology 3, Physiological Botany 3, Geometry and Trigonometry 4, Descriptive Geometry 2.

(c) SUMMER COURSE.

SEE ANNOUNCEMENT OF SUMMER SCHOOL BELOW.

SUMMER SCHOOL FOR TEACHERS.

GEORGE T. WINSTON, A. M., LL.D., President.

D. H. HILL, A. M., Vice-President.

CHARLES W. BURKETT, M. S., Ph. D., Dean of Industrial Departments.

EDWARD P. MOSES, A. M., Dean of Normal and Literary Departments.

WADE R. BROWN, Dean of Music Department.

CHARLES J. PARKER, Secretary.

The first session of the Summer School for Teachers was held in the College buildings, July 1 to July 31, 1903. The total attendance was 338, representing nine States, and fifty-seven counties in North Carolina. The teachers in attendance came from one hundred and sixty-seven rural schools, sixty-six city graded schools, and thirty-nine academic and high schools.

The second session of the Summer School for Teachers will begin July 4th and close July 29, 1904, and will be followed immediately by the State Farmers' Convention, August 2d to August 5th.

DEPARTMENTS OF INSTRUCTION.

I. Industrial.

a Agriculture, Nature Study, School Gardening.
b Paper and Card-board, Sloyd, Carpentry.
c Mechanical Drawing.
d Art Drawing (Chalk, Charcoal, Pencil, and Water-color).
e Raphia, Pyrography, Modeling, Color and Brush Work.
f Kindergarten, Elementary Grade Work.

II. Literary.

a English (Composition, Language, and Literature).
b History (Lectures and Investigations).
c Mathematics (Arithmetic and Algebra).

d French and German (Elementary, Advanced, and Conversational).
e Spanish and Italian (Elementary).
f Latin (Elementary, Advanced, Teachers' Course).

III. Normal.

a Review of Public School Studies and Methods.
b Model School (Methods of Instruction).
c Superintendence, School Law, Public School System.
d Kindergarten: 1. With Pupils; 2. With Teachers and Mothers.

IV. Music.

Public School Music (Vocal, Piano, Stringed Instruments).

V. Commercial.

Stenography, Typewriting, Book-keeping, Penmanship.

VI. Elocution and Physical Culture.

VII. Concerts and Lectures.

Expenses.—Board and room in College dormitories—separate buildings for men and women—$10 per month. Those wishing board outside can secure it at $12 per month up. Tuition, $5. Registration, $1.

For detailed statement of Summer School work, faculty, etc., address

President GEORGE T. WINSTON,
West Raleigh, N. C.

DONATIONS.

The College makes thankful acknowledgment of the receipt of the following gifts during the year:

To the Department of Chemistry.

Armour & Co. (Pepsin Department), Chicago.—Several samples of suprarenalin and other laboratory products.

Pittsburg Reduction Company, Pittsburg.—Several samples of aluminum products.

To the Textile Department.

Draper Company, Hopedale, Mass.—One Northrop-Draper loom with 20-harness dobby, complete; loom beams and filling bobbins for above; one ball winding attachment for section warper; repair parts for twister.

Whitin Machine Works, Whitinsville, Mass.—One 12-harness dobby; repairs for carding and spinning machinery.

Mason Machine Works, Taunton, Mass.—Box chain and pattern chain for looms; one spring jack and set of lens attachments for dobby loom.

Kilburn & Lincoln, Fall River, Mass.—One high-speed sheeting loom.

Saco & Pettee Machine Shops, Newton Upper Falls, Mass.—Repairs for spinning and roving frames.

T. C. Entwistle Company, Lowell, Mass.—One long chain beamer, complete.

Jones & Laughlins (Ltd.), Pittsburg, Pa.—Additional shafting, pulleys, hangers, couplings and clutch.

General Electric Company, Schenectady, N. Y.—Part value on one 30-horse-power and one 15-horse-power induction motor.

Charlotte Supply Company, Charlotte, N. C.—Part value on roving cans, cars and boxes.

Universal Winding Company, Boston, Mass.—Samples Universal yarns on cones, tubes and spools.

A. H. Steele & Bro., Worcester, Mass.—One 5-shuttle batten for suspender loom.

Faulkner, Pagle & Co., New York.—One case sample cloths.

Stoddard, Haserick, Richards & Co., Boston, Mass.—Two spools ramie doup twine.

R. G. Campbell, Greensboro, N. C.—One pair iron lugs.

Christian Becker, New York.—Part value on one set fine grain scales and weights.

Cassella Color Company, New York.—Samples dye-stuffs.

Farbenfabriken von Elberfeld Company, New York.—Samples dye-stuffs.

Courtesies Extended.

Textile Excelsior, Charlotte, N. C.
Textile Manufacturers' Journal, New York.
Fiber and Fabric, Boston, Mass.
Manufacturers' Record, Baltimore, Md.
Textile World, Boston, Mass.
Dyers' Bulletin, Philadelphia, Pa.
The Dyer and Calico Printer, London, Eng.
The Chemical Trade Review and Dyers' Trade Journal, Phila., Pa.
Garment Dyers' Guide, Philadelphia, Pa.
Cassella Color Company, New York City.
Pilot Cotton Mills, Raleigh, N. C.
Caraleigh Cotton Mills, Raleigh, N. C.

To the Library.

Harper & Bros., New York.—"Rise and Progress of Standard Oil Company," by Gilbert Holland Montague.

Mr. James H. Hyde, New York.—"A Biographical Sketch," by Henry Baldwin Hyde.

J. H. Williams, Rialto, N. C.—"Last Days of Pompeii," by Bulwer; "Hawaii," by A. D. Hall; "Porto Rico," by A. D. Hall; "Rob Roy," by Sir Walter Scott; "Waverley," by Sir Walter Scott; "Life of General U. S. Grant," by W. H. Van Orden; "Life of General Phil. H. Sheridan," by W. H. Van Orden; "The Real Kruger and the Transvaal"; "Legend of Montrose."

Mrs. George T. Winston, Raleigh, N. C.—"Simple Adventures of a Memsahib," by Sara Jeanette Duncan; "Wanted: A Match Maker," by Paul Leicester Ford; "Faust," by Goethe; "Ray's Daughter," by Captain Charles King; "Soldiers Three," by Rudyard Kipling; "The Pit," by Frank Norris; "Lives of Distinguished North Carolinians," compiled by W. J. Peele; "Home Building and Furnishing," by

Price & Johnson; "How They Kept the Faith," by Grace Raymond; "The True and the Beautiful," by John Ruskin; "Beautifying Suburban Home Grounds," by Frank J. Scott; "Domesticated Animals," by Nathaniel S. Shaler; "A Sentimental Journey," by Laurence Sterne; ""Historie de Charles XII," by Voltaire; "The Simple Life," by Charles Wagner; "Lady Rose's Daughter," by Mrs. Humphrey Ward; "Gentleman of France," by Stanley J. Weyman.

Professor W. A. Withers, Raleigh, N. C.—"Twixt Cupid and Crœsus," by Charles P. Didier; "The Inside of Mormonism," United States District Court.

To the Registrar's Office.

Imperial Manufacturing Company, Newark, N. J.—One set of typewriter cushion keys.

CATALOGUE OF STUDENTS.

GRADUATES.

Name.	*Post-office.*	*Major Course.*
Junius Sidney Cates, B.Agr.,	Raleigh,	Agriculture.
Eugene English Culbreth, B.E.,	Statesville,	Elec. Eng.
Walter Lee Darden, B.E.,	Goldsboro,	C. E. & Agr.
Oliver Max Gardner, B.S.,	Shelby,	Chemistry.
John Howard Glenn, B.E.,	Crowder's Creek,	Civil Eng.
Carroll Lamb Mann, B.E.,	Englehard,	Civil Eng.
Roger Francis Richardson, B.E.,	Selma,	C. E.
Cleveland Douglass Welch, B.E.,	Waynesville,	E. E. & Agr.

SENIOR CLASS.

Name.	*Post-office.*	*Course.*
Nelson Adams,	McColl, S. C.	M. E.
Haywood Lewis Alderman,	Greensboro,	E. E.
Sydney Woodward Asbury,	Burkmont,	M. E.
Eugene Cleveland Bagwell,	Raleigh,	C. E.
Edward Parr Bailey, Jr.,	Wilmington,	M. E.
James Cladius Barber,	Barber,	M. E.
William Walter Barber,	Barber,	M. E.
William Alexander Barrett,	White Store,	E. E.
Timothy Eldridge,	Glenwood,	E. E.
James William Farrior,	Kenansville,	E. E.
William Walter Finley,	North Wilkesboro,	Agr.
George Washington Foushee,	Greensboro,	Tex.
Edgar William Gaither,	Wilmington,	Chem. (D.)
Paul Stirewalt Grierson,	Mooresville,	M. E.
Joseph Perrin Gully, Jr.,	Raleigh,	E. E.
Jarvis Benjamin Harding,	Greenville,	Tex.
George Herbert Hodges,	Kinston,	M. E.
Jesse McRae Howard,	Wadesboro,	Tex.
Branton Faison Huggins,	Goldsboro,	M. E.
Hill McIver Hunter,	Durham,	Tex.
William Kerr,	Bryson City,	Agr.
Ernest Edwin Lincoln,	Kinston,	C. E.

Name.	*Post-office.*	*Course.*
John Fairly McIntyre,	Laurinburg,	M. E.
James McKimmon,	Raleigh,	Tex.
Joseph Alfred Miller, Jr.,	Brevard,	E. E.
William Field Morson,	Raleigh,	C. E.
Leon Andrew Neal,	Marion,	C. E.
William Joel Patton,	Brevard,	E. E.
Frederick Colwell Phelps,	West Raleigh,	E. E.
William Walter Rankin,	Charlotte,	M. E.
Risden Patterson Reece,	Mount Airy,	M. E.
William Richardson, Jr.,	Selma,	M. E.
James Clarence Temple,	Sanford,	Agr.
Joseph Kendall Waitt,	Raleigh,	C. E.
Marion Emerson Weeks,	Scotland Neck,	M. E.
Albert Clinton Wharton, Jr.,	Clemmonsville,	Agr.

JUNIOR CLASS.

Robert James Avery,	Morganton,	Agr.
Oscar Luther Bagley,	Bagley,	Chem.
Benjamin Alexander Broom,	Olive Branch,	M. E.
Joel Watkins Bullock,	Williamsboro,	Agr.
Henry Brozier Cartwright,	Elizabeth City,	C. E.
William Miller Chambers,	Wentworth,	E. E.
Hilliard Francis Creitzberg, Jr.,	Gastonia,	Chem.
Latta Vanderian Edwards,	Merry Oaks,	C. E.
Walter Goss Finch,	Lexington,	M. E.
Sterling Graydon,	Greenwood, S. C.,	M. E.
Fred. Watson Hadley,	Siler City,	Chem.
Richard Hugh Harper,	Patterson,	Chem.
Odis Hildreath Henderson,	Hampstead,	M. E.
Laban Miles Hoffman, Jr.,	Dallas,	Tex.
Julian Meredith Howard,	Tarboro,	C. E.
Eugene Bond Howle,	Raleigh,	Tex.
Arthur Templeton Kenyon,	Clinton,	C. E.
Starr Neely Knox,	Pineville,	C. E.
James Herritage Koonce,	Richlands,	C. E.
Robert Charles Lehman,	Raleigh,	C. E.
Henry Marvin Lilly,	Rest,	C. E.
Sebor Smedes Lockhart,	Wadesboro,	E. E.
Lipscombe Goodwin Lykes,	Tampa, Fla.,	Mining.

Name.	*Post-office.*	*Course.*
George Green Lynch, Jr.,	Wilmington,	E. E.
Walter Hoge McIntire,	Wilmington,	Chem.
Charles Wigg Martin,	Portsmouth, Va.,	Agr.
James Oscar Morgan,	Etowah,	Agr.
Lindsay Alexander Murr,	Wadesboro,	C. E.
Garland Perrin Myatt,	Raleigh,	Chem.
John Alsey Park,	Raleigh,	M. E.
Linus Marcellus Parker,	Raleigh,	Chem.
James Hicks Peirce,	Warsaw,	Chem.
P. H. Poindexter, Jr.,	Donoha,	Agr.
Edward Griffith Porter,	Goldsboro,	C. E.
John Forney Reinhardt, Jr.,	Reinhardt,	Agr.
Robert Walter Scott, Jr.,	Melville,	Agr.
James Roscoe Sechrist,	High Point,	C. E.
Charles Alvin Seifert,	Wilmington,	Chem.
Jonathan Rhodes Smith,	Merry Hill,	C. E.
William Lincoln Smith, Jr.,	Wilmington,	Chem.
John Davidson Spinks,	Albemarle,	C. E.
John Houston Squires,	Lenoir,	Agr.
Dallis Miffin Stanton, Jr.,	LaGrange,	Agr.
Sylvester Murray Viele,	Salisbury,	E. E.
Charles Tenant Venable,	Asheville,	E. E.
Walter Jennings Walker,	Winston,	E. E.
Steven Dockery Wall,	Rockingham,	M. E.
Walter Wellington Watt,	Charlotte,	Tex.
Archie Carraway Wilkinson,	Charlotte,	C. E.
John Enoch Williams,	Kinston,	E. E.

SOPHOMORE CLASS.

Durant Stewart Abernethy,	Hickory,	C. E.
George Gilderoy Allen,	Hiddenite,	Tex.
Risden Taylor Allen,	Wadesboro,	E. E.
Raymond Vance Allison,	Statesville,	M. E.
George Page Asbury,	Burkmont,	C. E.
John Grange Ashe,	Raleigh,	Tex.
John Gilbert Baldwin,	Maxton,	E. E.
James Claudius Beavers,	Morrisville,	Agr.
Harwood Beebe,	Baltimore, Md.,	C. E.
Needham Eric Bell,	Kinston,	Chem.

Name.	*Post-office.*	*Course.*
Kenneth Leon Black,	Mount Mourne,	C. E.
Sterling Gee Boddie,	Laurel,	Tex.
William Francis Brock,	Farmington,	C. E.
William Andrews Buys,	Havelock,	C. E.
Mark Hopkins Chesbro,	Claremont, Va.,	Agr.
Connor Calhoun Clardy,	Concord,	E. E.
David Mackenzie Clark,	Weldon,	C. E.
Edwin Clark, Jr.,	Weldon,	E. E.
John Washington Clark,	Raleigh,	M. E.
James Duncan Clarke, Jr.,	Tampa, Fla.,	Chem.
Samuel Herbert Clarke,	Statesville,	C. E.
Wiley Theodore Clay,	Hickory,	M. E.
Arthur Gardner Coffin,	Greensboro,	E. E.
Duncan Archibald Cox,	Rowland,	E. E.
Alexander Doane Cromartie,	Garland,	Agr.
William Osborne Crump,	Polkton,	E. E.
William Maurice Daughtridge,	Rocky Mount,	Agr.
Benjamin Ballard Egerton,	Ingleside,	C. E.
William Carlyle Etheridge,	Manteo,	Agr.
James Beckett Ewart,	Hendersonville,	E. E.
Samuel Morgan Fisher,	Lake Landing,	C. E.
Shirly Watson Foster,	Nance,	Agr.
Charles Wilie Franklin,	Mt. Airy,	Agr.
William Alva Greenleaf,	Elizabeth City,	M. E.
Arthur Wynn Gregory,	Halifax,	Tex.
Charles Walter Hackett,	North Wilkesboro,	C. E.
George Parish Hamilton,	Charlotte,	M. E.
Horace Lester Hamilton,	Biltmore,	E. E.
John Frederick Hanselman,	Manson,	M. E.
Clarence Carl Harrell,	Hamilton,	Agr.
Clarence Wilson Hewlett,	Wilson,	E. E.
James Allan Higgs, Jr.,	Raleigh,	C. E.
Cyrus Walker Hodges,	LaGrange,	M. E.
William Claude Huband,	Winston,	M. E.
Claude Beverly Huggins,	Goldsboro,	M. E.
Lester Lafayette Jordan,	Raleigh,	C. E.
William Graham Knox,	Charlotte,	E. E.
Eugene Talmage Lee,	Dunn,	E. E.
Martin Pearl Lipe,	Mint Hill,	Agr.
Louis Edgar Lougee,	Raleigh,	M. E.

Name.	*Post-office.*	*Course.*
Joe Poindexter Lovill,	Pine Ridge,	C. E.
Thompson Mayo Lykes,	Tampa, Fla.,	C. E.
John Chesley McCaskill,	Maxton,	E. E.
Malcom Rolland McGirt,	Rowlands,	Agr.
Horace Smith McLendon,	Ansonville,	Agr.
Albert Powers McMillan,	Fayetteville,	Tex.
Raymond Maxwell,	Resaca,	C. E.
James Edwin Moore,	Williamston,	C. E.
Lacy Moore,	Graham,	E. E.
Walter Booker Moorman,	Asheville,	E. E.
Joseph Graham Morrison,	Mariposa,	Agr.
Jesse Clarence Myrick,	Littleton,	E. E.
Ben Allen Newland,	Lenoir,	E. E.
Charles Gattis Nichols, Jr.,	Roxboro,	M. E.
Charles Franklin Niven,	Morven,	Agr.
Lola Alexander Niven,	Cairo,	Agr.
James Churchwell O'Berry,	Dudley,	Agr.
Lewis Milton Oden,	Hunter's Bridge,	Agr.
Thomas Jefferson Ogburn,	Greensboro,	M. E.
Clyde Ester Parker,	Raleigh,	Chem.
Arthur Lee Paschal,	Vaughan,	Agr.
Carl Randall Pepper,	Southport,	C. E.
Samuel Oscar Perkins,	Muttenz,	Chem.
Angelo Bettlena Piver,	Wilson,	C. E.
William Crawford Piver,	Wilson,	E. E.
Henry Fries Primrose,	Raleigh,	M. E.
Durant Waite Robertson,	Washington, D. C.,	Tex.
Clyde Vernon Ross,	Bonnerton,	M. E.
Ward Shannanhouse,	Charlotte,	Chem.
Colman Morell Smith,	Crystal Hill, Va.,	M. E.
Alfred Duncan Smithwick,	Sans Souci,	C. E.
Ervin Blakeney Stack,	Monroe,	E. E.
Freddie Jackson Talton,	Pikeville,	Agr.
Bayard Taylor,	Beaufort,	E. E.
Luther Russell Tillett,	Carolla,	C. E.
Richard Henry Tillman,	Deep Creek,	E. E.
William Sidney Tomlinson,	Goldsboro,	C. E.
Reid Tull,	Kinston,	C. E.
Hugh Marshall Turner,	Norwood,	Tex.
Jackson Corpening Tuttle,	Lenoir,	E. E.

Name.	*Post-office.*	*Course.*
Robert Peel Uzzell,	Goldsboro,	Agr.
Peter Valaer, Jr.,	Winston,	Chem.
Lillian Lee Vaughan,	Franklin, Va.,	M. E.
Charles Manly Walton,	Morganton,	C. E.
Ralph Ouray Walton,	Morganton,	M. E.
Alexander White,	Floral College,	Agr.
John Harleigh Williams,	Rialto,	Tex.
Lewis Taylor Winston,	West Raleigh,	Agr.

FRESHMAN CLASS.

Thomas Williams Adickes,	Raleigh,	C. E.
Robert Franklin Armfield,	Statesville,	E. E.
Clarence Richard Aycock,	Whiteville,	Tex.
Ernest Howard Barnes,	Bizzell,	M. E.
Herbert Scandlin Battie,	Greensboro,	C. E.
Joe Pittman Bivens,	Goodman,	C. E.
Alexander Lillington Blow, Jr.,	Greenville,	C. E.
John Young Bonner,	Aurora,	M. E.
John Bingham Booth,	Oxford,	E. E.
William Giles Broadfoot,	Fayetteville,	Tex.
James Pittman Brooks,	Grifton,	Agr.
Richard Buracker,	Shenandoah, Va.,	E. E.
Lindsay Ferguson Carleton,	Boomer,	E. E.
Robert Hill Carter,	Blackstone,	E. E.
Kinchen Clyde Council,	Wananish,	M. E.
Claud Council Dawson,	Grifton,	Tex.
Jack Carrier Denison,	West Asheville,	E. E.
Carl Nichols Dunn,	Raleigh,	C. E.
Jacob Tatum Eaton,	Farmington,	Agr.
John Lindsay Ferguson,	Kendal,	M. E.
William Henry Fetter,	Winston-Salem,	M. E.
Frank Theodore Foy,	Winston-Salem,	E. E.
Henry Almond Foy,	Kinston,	M. E.
Thomas Maxwell Freeman,	Goldsboro,	M. E.
Clement Leinster Garner,	Beaufort,	C. E.
Frank Duncan Gibson,	Gibson,	Agr.
Jeptha Nelson Gibson,	Gibson,	Agr.
Roy Joseph Gill,	Raleigh,	C. E.
Joseph Bassett Gooch,	Weldon,	M. E.

Name.	*Post-office.*	*Course.*
Robert Strickler Graves,	Syria, Va.,	E. E.
John Clarence Grimes,	Lexington,	M. E.
Richard Frederick Hamme, Jr.,	Wilmington,	E. E.
John Davis Hamner,	High Point,	E. E.
George Rom Hardesty,	Wakefield,	M. E.
John Gabriel Hardison,	Thurman,	Agr.
Gordon Harris,	Raleigh,	E. E.
Joktan Lafayette Hemphill,	Morganton,	E. E.
Guy Francis Hinshaw,	Winston-Salem,	C. E.
Arthur Napoleon Holshouser,	Spencer,	E. E.
William Norman Holt,	Smithfield,	M. E.
George Leon Hooks,	Fremont,	Agr.
Glenn Victor Hoover,	Winston-Salem,	E. E.
John Penn Hunt,	Winston,	M. E.
James Iredell Johnson, Jr.,	Raleigh,	C. E.
Thomas Wilmot Johnson,	Raleigh,	M. E.
Eric Franklin Johnston,	Raleigh,	M. E.
Harold Chapman Johnston,	Raleigh,	C. E.
Albert Carl Jones,	Wheatmore,	Agr.
Lawrence O'Toole Jones,	Raleigh,	M. E.
Rufus Henry Jones, Jr.,	Asheville,	Tex.
William Whitmore Jones,	Franklin,	E. E.
Philip Dalton Kennedy,	Daltonia,	Tex.
Clark Harrison Kirkman,	Pleasant Garden,	Agr.
Cullen Leggett Korner,	Kernersville,	E. E.
Charles Edward Latta,	Raleigh,	Tex.
Luther Vernon Lewis,	Beaufort,	E. E.
Clement Lacy Lowrance,	Mooresville,	E. E.
James Burton Lyle,	Franklin,	E. E.
James Borden Lynch,	Wilmington,	C. E.
Joseph Alden Lyon,	Elizabethtown,	Agr.
Joe Cleveland McCanless,	Salisbury,	C. E.
Belton Fletcher McColman,	Gibson,	Agr.
Oscar Franklin McNairy,	Greensboro,	M. E.
Lewis Carlton Matthews,	Bradley's Store,	E. E.
Valentine Mauney,	Salisbury,	Mining.
Eugene Franklin Meador,	Reidsville,	M. E.
Bennett Taylor Mial,	Raleigh,	Tex.
Oscar Durham Middleton,	Warsaw,	E. E.
Frank Thomas Miller,	Rural Hall,	E. E.

Name.	*Post-office.*	*Course.*
Roy Herbert Mitchell,	Rolesville,	C. E.
Henry Starbuck Montague,	Winston-Salem,	Chem.
Charles Milton Moore,	Gastonia,	Tex.
Boger Hendrix Mott,	Statesville,	M. E.
Victor Motz,	Lincolnton,	Tex.
Edwin Scott Myatt,	Raleigh,	M. E.
Jonathan Whitehead Old, Jr.,	Portsmouth,	E. E.
Robert Douglas Olds,	Raleigh,	M. E.
James Nunn Oliver,	Mt. Olive,	C. E.
Norwood Orrell,	Wilmington,	M. E.
Charles Cullen Osborne,	Lawndale,	M. E.
James Elwood Overton,	Ahoskie,	Agr.
Clarence Estis Page,	Morrisville,	Tex.
Thomas Frank Parker,	Hillsboro,	Agr.
Fred. Maynard Parks,	Morganton,	M. E.
Hill Crawford Parsons,	Rockingham,	M. E.
Edward Newton Pegram,	Gastonia,	C. E.
Guy Pinner,	Elm City,	E. E.
Winslow Gerald Pitman,	Lumberton,	M. E.
James Kemp Plummer,	Middleburg,	M. E.
Ernest Leonard Riddick,	Gatesville,	Tex.
Rufus Morrison Riddick, Jr.,	Gatesville,	Tex.
William Moore Riddick, Jr.,	Hertford,	C. E.
Zeb. Vance Rierson,	Winston-Salem,	M. E.
Thomas Wilson Sadler,	Sandifer,	M. E.
Leon Jacob Schwab,	Goldsboro,	C. E.
John Oscar Shuford,	Gastonia,	E. E.
John Ernest Sigmon,	Newton,	E. E.
Henry Sprague Silver,	Morganton,	E. E.
James Lawrence Smith, Jr.,	Linden,	M. E.
Leon Martin Smith,	Goldsboro,	C. E.
Ralph Hunter Smith,	New Bern,	M. E.
Jesse Page Spoon,	Oakdale,	Agr.
Clifton Earle Stancil,	Hills,	E. E.
William Crawford Staples,	Reidsville,	E. E.
Carl Thomas Strupe,	Winston-Salem,	Agr.
Vance Sykes,	Rock Spring,	C. E.
Loftin Agrippa Tart,	Newton Grove,	M. E.
Claude Stratton Tate,	Littleton,	M. E.
John William Thornton,	Dunn,	C. E.

Name.	*Post-office.*	*Course.*
William Brooks Truitt,	Greensboro,	M. E.
John Ed. Turlington,	Clinton,	Agr.
Horace Henry Vance,	Winston-Salem,	M. E.
Ernest Monroe Watkins,	Anderson, S. C.,	M. E.
George Murray Watson,	Wysocking,	C. E.
Lindsay Marade Weaver,	Lexington,	M. E.
Charlie Louis Weill,	Rockingham,	E. E.
William Hall Wetmore, Jr.,	Greensboro,	C. E.
David Lyndon White,	Trinity,	Agr.
George Lumsden White,	Raleigh,	E. E.
Sidney Russell White,	Scotland Neck,	C. E.
Cecil Bernard Whitehurst,	Beaufort,	E. E.
William Henry Whitley,	Albemarle,	Tex.
Norman Lee Willis,	Beaufort,	E. E.
Edgar Adolph Wohlford,	Winston-Salem,	M. E.
Herbert William Wohlford,	Winston-Salem,	E. E.

SHORT COURSE STUDENTS.

Second Year.

Zera Thaxton Benson,	Lake Comfort,	M. A.
George Carlton Cole,	Carbonton,	M. A.
Martin Henry Collins,	Holly Springs,	M. A.
Charles Bernard Dove,	Franklinville,	M. A.
Cicero Horace Durham,	Saxapahaw,	Tex.
Rufus Eugene Forbis,	Greensboro,	M. A.
Walter Maurice Haigler,	Hayesville,	Tex.
Cooper Andrews Hall,	Woodsdale,	Tex.
Grover Cleveland Hardesty,	Morehead City,	Agr.
Walter Evander Kelly,	Carthage,	Agr.
Job Hansell Koon,	Asheville,	M. A.
William Edward McLauchlin,	Cheraw, S. C.,	M. A.
Willard Bowden Middleton,	Warsaw,	M. A.
Frank Faison Miller,	Pearsall,	M. A.
James Thomas Morgan,	Corapeake,	Con. & Bldg.
Hubert Berry Nicholson,	Richlands,	Agr.
Fleetwood Brown Rankin,	Brown's Summit,	Tex.
Wallace Sellars,	Southport,	M. A.
Hugh Frank Turlington,	Clinton,	Agr.

Name.	*Post-office.*	*Course.*
John Wescott,	Manteo,	M. A.
Ernest Eugene White,	Albright,	M. A.
Grover Stockton Williams,	Boonville,	Agr.
Ralph Oneida Wilson,	Delway,	Agr.

First Year.

Jesse Marvin Aldridge,	Institute,	M. A.
Webster Spruill Alexander,	Columbia,	M. A.
John Daniel Andrews,	Roxboro,	M. A.
Carl Fletcher Bagley,	Bagley,	Agr.
Frank Oscar Baldwin,	Portsmouth, Va.,	M. A.
Daniel William Barnhill,	Oxford,	Agr.
Eugene Thomas Beddingfield,	Raleigh,	Agr.
Johnie Madison Berry,	Lake Comfort,	Agr.
Robert Craven Bridger,	Bladenboro,	M. A.
John Monroe Britt,	Merry Hill,	Agr.
Jesse Worth Burns,	Gaddysville,	Agr.
William Paul Carroll,	Shelby,	M. A.
Robert Charlie Chamblee,	Wakefield,	Agr.
Simon Coker,	Garysburg,	M. A.
Kerr Miller Clement,	Farmington,	Agr.
Samuel Festus Cole,	Alderman,	Agr.
Louis Hill Couch,	Southern Pines,	M. A.
James William Crawford,	Marion,	M. A.
James Crosland,	Diggs,	Agr.
William Henry Crow,	Raleigh,	M. A.
George Eugene Crowell,	Candler,	Agr.
Clyde Waterson Deal,	Raleigh,	Agr.
Blaine Clingman Dellinger,	Shelby,	M. A.
Louis C. Drake,	McAdensville,	M. A.
Paul Herschel Ferguson,	Whittier,	Agr.
Warren Gross Ferguson,	Southern Pines,	M. A.
Urban Banious Fisher,	Lake Comfort,	Agr.
Alan Fraser,	London, Eng.,	M. A.
William Walter Gainey,	Hope Mills,	Agr.
Seth Mann Gibbs,	Middleton,	Tex.
Charles Patterson Gorman,	Cronly,	Agr.
William Thomas Grimes,	Lexington,	M. A.
Samuel Spence Haithcock,	Greensboro,	M. A.

Name.	*Post-office.*	*Course.*
Malgrin Flay Hamrick,	Caroleen,	M. A.
William Preston Harrell, Jr.,	Sunbury,	Agr.
Henry William Harrington,	Diggs,	M. A.
Thomas Harris,	Raleigh,	M. A.
Clifford Harrison,	Franklin,	Agr.
Randolph Harrison,	Raleigh,	M. A.
Troy Isaiah Herring,	Herring,	M. A.
Theodore Thompson Hester,	Roxboro,	Agr.
John Murchison Hodges,	Linden,	Tex.
Milton Walker Hunter,	Oxford,	M. A.
Roy Marshall Huntley,	Wadesboro,	M. A.
James Clark Jackson,	Fayetteville,	M. A.
William Eston Jenkins,	Roxobel,	Agr.
Henry Kellogg,	Sunbury,	Agr.
Johnson Olive Kelly,	Apex,	Agr.
Vernon Liles Knotts,	Wadesboro,	M. A.
Hugh Burton Lance,	Hot Springs,	M. A.
Joseph Joshua Lane,	Dunn,	M. A.
Roy Carlton Lassiter,	Snow Hill,	Tex.
William Herbert Lawrence,	Goff,	M. A.
Ed. Milburn Linville,	Kernersville,	M. A.
Walter Haveland Lowe,	Woodland,	M. A.
William Oneal McKeown,	Cornwell, S. C.,	M. A.
Ralph Edgar McLaurin,	McColl, S. C.,	Agr.
Allen Pemberton McNeill,	Hope Mills,	M. A.
Walter Lafayette Mason,	Stanley,	M. A.
Marshall Paulus Massie,	Bryant, Va.,	M. A.
Edward H. Mellichampe, Jr.,	Weldon,	M. A.
Richard Henry Moore, Jr.,	Battleboro,	M. A.
William Carroll Moore,	Globe,	M. A.
Herbert Wright Morrisette,	Shiloh,	M. A.
Archie Dean Moseley,	Kinston,	Agr.
David Robert Nelms,	Washington,	Agr.
Waverly Boyd Newsome,	Aulander,	M. A.
James Caleb Parker,	Elm City,	M. A.
Paul Michaux Pearson,	Morganton,	Agr.
John Shaw Pescud,	Raleigh,	M. A.
Lawrence Lyon Pittman,	Whitakers,	M. A.
William Lacy Price,	Ashpole,	Agr.
John Bradford Pritchett,	Gudger,	M. A.

Name.	*Post-office.*	*Course.*
Thomas Augustus Rayner,	Merry Hill,	M. A.
Stephen Blaine Roberts,	Marshall,	Agr.
Lee Constantine Savage,	Scotland Neck,	Agr.
James Clifton Sawyer,	Elm City,	M. A.
Martin Henry Schulken,	Whiteville,	M. A.
Richard Belva Sears,	Como,	Agr.
Harvey Hill Smith,	Lemon Springs,	M. A.
Jesse Marvin Smith,	Farmington,	Agr.
John Williams Smith,	Merry Hill,	Agr.
Marsden Spencer Smith,	Wilmington,	M. A.
Tennyson Barrett Smith,	Iron Station,	Agr.
Clem Numa Somers,	Elon College,	M. A.
Nelson Thomas Stacy,	Asheville,	M. A.
Jesse Coletrane Stansel,	Allenton,	Agr.
Herbert Nathan Steed,	Steeds,	Tex.
Charles Edward Stewart,	Claremont,	M. A.
Herschell Lindley Swann,	Cool Springs,	Agr.
Guy Claudius Taylor,	Hyco,	M. A.
William Nollie Tillett,	Carolla,	M. A.
Hugh Bryon Tunstall,	Snow Hill,	Agr.
James Archie Underwood,	Newton Grove,	M. A.
Paul Valaer,	Winston,	M. A.
George Willis Warren,	Spring Hope,	Agr.
Joe Green Warwick,	Laurinburg,	Agr.
Thomas Emmett Watson,	Raleigh,	Agr.
Roscoe Robertson Weaver,	Nonah,	M. A.
Frank Blount Webb,	Hillsboro,	M. A.
Loyd Adolphus Whitener,	Hickory,	M. A.
Hugh Allan Willis,	McColl, S. C.,	M. A.
John Samuel Wilson,	Oxford,	Agr.
Robert Graves Wilson,	Madison,	Agr.
Robert Thomas Wilson,	Gatewood,	Tex.
Thomas Henry Wilson,	Begonia,	Agr.
James Monroe Woodhouse,	Manteo,	M. A.

Irregular Students.

Leroy Franklin Abernethy,	Hickory,	Agr.
Willis Walters Baker,	Wakefield,	C. E.
James Maglenn Baskerville,	Charlotte,	E. E.

Name.	*Post-office.*	*Course.*
Abram Oliver Bray,	Elkin,	E. E.
William Henry Asbury Brown,	Brevard,	M. A.
Albert Bretsch,	Raleigh,	M. E.
Thomas Robert Buckley,	Washington, D. C.	Agr.
Weldon Thomas Davis,	Arcola,	Agr.
James Stoney Drake,	Mountain Island,	Tex.
Benjamin Bryan Everett,	Palmyra,	Agr.
Claud Vivian Garner,	Grissom,	M. E.
James Lytch Gibson,	McColl, S. C.,	Agr.
Charles Marion Hamilton,	Charlotte,	E. E.
James Herbert Helvin,	Charlotte,	M. E.
Lawrence James Herring,	Clinton,	Agr.
Jere Isaac Herritage,	Catherine Lake,	C. E.
Richard Rowan Holt,	Smithfield,	Agr.
Lloyd Rainey Hunt,	Lexington,	E. E.
William Franklin Kirkpatrick,	Charlotte,	Agr.
Lafayette Frank Koonce,	Richlands,	Agr.
Joseph Young McClelland,	Jefferson, O.,	Agr.
Samuel Sankey Mauney,	Shelby,	Agr.
Henry Hall Murray,	Greensboro,	Mch. & Dwg.
Virgil Lee Neal,	Madison,	Agr.
William Crawford Phillips,	Roberdel,	Agr.
Pryor Watson Purefoy,	Asheville,	Shop.
Eugene Thomas Robeson,	Greensboro,	C. E.
Louis West,	Raleigh,	E. E.
Ronald Bonar Wilson,	Greensboro,	Tex.

Special Students.

Octavio Augusto Acevedo,	Macoris, S. Domingo,	C. E.
John Brewer Bagley,	Scotland Neck,	Tex.
Sherwood Battle Brockwell,	Raleigh,	Shop.
Enoch Pratt Fearing,	Pasquotank,	Eng. & Math
Ardie Ransom Hunter,	Harrisburg,	Drawing.
Sharpe Ireland,	Winston,	Shop.
Miss Evelyn Byrd Lawrence,	Raleigh,	Arch.
Walter Graham Moore,	Burgaw,	Drawing.
Ira Broadus Mullis,	Union,	Survey.
Eston George Renno,	Canton,	Drawing.

Name.	*Post-office.*	*Course.*
George Beard Roberson,	Guilford College,	Tex.
Miss Ivey Roberts,	Raleigh,	Drawing.
George A. Shuford,	Winston,	Shop.
Alfred Burton Slagle,	Crawford,	Drawing.
Louis Murdock Smith,	Raleigh,	Agr.
John Wilbur Snipes,	Chapel Hill,	Agr.
Fred. Ernest Springs,	Charlotte,	Shop.
Miss Frances Claire Stainback,	Raleigh,	Chem.
Manuel Maria Vilomar,	Macoris, S. Domingo,	Agr.

WINTER COURSE STUDENTS.

Fred. Purvis Albright,	Greensboro,	Dairying.
James Cullen Bryant,	Caswell,	Dairying.
John Thomas Culbreth,	Lowe,	Dairying.
Hilsmon Clellan Davis,	Grissom,	Dairying.
Hugh Alexander Dobbin,	Valle Crucis,	Dairying.
William Ressie Foust,	Wright,	Dairying.
Harvey Galyean,	Asheville,	Dairying.
George Bascombe Glenn,	Avery's Creek,	Dairying.
Walter Harrison Hardin,	Julian,	Dairying.
Silvester Starr Higgins,	Guilford College,	Dairying.
Everett Clarence Hodgin,	Greensboro,	Dairying.
Augustus Pritchard Howard,	Salemburg,	Dairying.
Walter Lee Jackson,	Greensboro,	Dairying.
John Herbert McGowan,	Lake Comfort,	Dairying.
Robert Scott McNairy,	Battle Ground,	Dairying.
Benjamin Wade Mangum,	Alton,	Dairying.
Oscar Lowell Mercahant,	Dana,	Dairying.
Marcus Edward Mimms,	Holly Springs,	Dairying.
Gather Wingate Mitchell,	Hexlena,	Dairying.
James Henry Mitchell,	Hexlena,	Dairying.
Charles Elliott Ritchie,	China Grove,	Dairying.
Joseph Windley Satterthwaite,	Sidney,	Dairying.
Hartwell Vick Scarborough,	Murfreesboro,	Dairying.
Horace Greely Wade,	Asheville,	Dairying.
John Carl White,	Mount Ulla,	Dairying.

SUMMER SCHOOL.

Name.	*County or State.*
Annie Abernethy,	Warren.
R. B. Adams,	Wake.
Kate Grey Allen,	Catawba.
Mrs. A. H. Alphin,	Craven.
Mrs. W. J. Andrews,	Wake.
Mary Arlington,	Duplin.
Lillian Askew,	Hertford.
Mary N. Askew,	Bertie.
Charity E. Atkinson,	Wayne.
Mary H. Atwater,	Chatham.
Effie Avent,	Wake.
Kate Bagley,	Halifax.
Mrs. L. W. Bagley,	Halifax.
Lila H. Bailey,	Alamance.
Amelia Baker,	Perquimans.
Mrs. J. M. Barbee,	Wake.
P. F. Barber,	Guilford.
Annie R. Barnes,	Bertie.
Grace Bates,	Wake.
Ida Beardsley,	Warren.
Lizzie Bellamy,	Wake.
Nancy Belvin,	Wake.
Sallie P. Betts,	Harnett.
H. H. Blackwelder,	Cabarrus.
Annie K. Blair,	Guilford.
Mrs. Chloe P. Blalock,	Wake.
Isabel Bland,	Wake.
Mrs. S. E. Bledsoe,	Wake.
Lena Boddie,	Nash.
Ernie N. Booker,	Johnston.
Mrs. W. R. Bond,	Halifax.
Claudia Boone,	Franklin.
Mrs. B. A. Bowers,	Halifax.
Mary R. Boyette,	Duplin.
S. F. Boyles,	South Carolina.
Ned F. Brannock,	Alamance.
Margaret V. Braswell,	Wake.
Mrs. Katie Breece,	Cumberland.

Name.	*County or State.*
Hattie Brogden,	South Carolina.
Elizabeth Brooks,	Moore.
Lucy Brooks,	Lenoir.
Rosa Broughton,	Wake.
Lela Brown,	Pitt.
Mary S. Brown,	Arizona.
W. M. Brown,	Davidson.
Alice Bryan,	Wake.
Elva Bryan,	Chatham.
Kate Bryan,	Moore.
Mary Bryan,	Wake.
Agnes Buffalo,	Wake.
R. H. Burns,	Nash.
Stella M. Burt,	Wake.
Mary Burton,	Wake.
Raymond A. Burt,	Wake.
Nellie Buys,	Craven.
Mary Bynum,	Chatham.
Mary Cannady,	Durham.
Minnie Cannady,	Durham.
Leyta R. Carter,	Nash.
Minnie B. Cartwright,	Pasquotank.
Elizabeth M. Carver,	Wake.
J. D. Champion,	Harnett.
Annie Clark,	Wake.
Belle Clark,	Bladen.
Gertrude M. Coffield,	Chowan.
Mrs. Etta Coleman,	Wilson.
Nina D. Collins,	Nash.
Emma Conn,	Wake.
Etta F. Cordon,	Beaufort.
Bettie Council,	Wake.
Clyde Cox,	Pitt.
Eulalie Cox,	Pitt.
Carrie Cronenburg,	South Carolina.
Elizabeth Crosland,	Richmond.
J. T. Crowder,	Wake.
J. E. Crutchfield,	Guilford.
Belle Darden,	Wake.
Lucy D. Davis,	Vance.

Name.	*County or State.*
Mary A. Davis,	Vance.
May Hill Davis,	Wake.
S. Jay Davis,	Wilson.
Theo. B. Davis,	Graham.
Lillian S. Dean,	Vance.
Mattie Lucinda Dean,	Vance.
George W. Deshazo,	Rockingham.
Ellie E. Dicks,	Wake.
Lillian Dodd,	Randolph.
Rosina Dowell,	Moore.
W. G. Dozier,	Nash.
Mary Edmundson,	Halifax.
Lena M. Edwards,	Wake.
Rosa Edwards,	Vance.
Ellen Eldridge,	Johnston.
Sadie Lee Ellias,	Wake.
Jennie Ellis,	Wilson.
Nora Ellis,	Vance.
Nannie Ellison,	Wake.
Kathleen Elmore,	Wayne.
Maggie Epps,	Virginia.
Millie J. Everett,	Martin.
Lizzie Featherston,	Caswell.
Kate Fenner,	Halifax.
Iola Ferguson,	Chatham.
J. W. Fleetwood,	Northampton.
Belle Fleming,	Wake.
Robert R. Fleming, Jr.,	Pitt.
Alice H. Flowers,	Wayne.
Fannie Fort,	Wake.
Sallie H. Fort,	Wake.
Ruth Foster,	South Carolina.
Fannie Foust,	Alamance.
E. B. Fowler,	Union.
Minnie L. Franklin,	Wake.
Stella Branson Franklin,	Wake.
Bessie L. Freeman,	Rowan.
Fannie Freeman,	Wilson.
Carrie Hunt Fuller,	Granville.
Laura F. Gallandy,	Surry.

Name.	*County or State.*
Mrs. A. B. Galloway,	Surry.
Bettie Gamble,	Gaston.
Nonie Garner,	Chatham.
Sudie Gay,	Wilson.
Helen E. Gillam,	Bertie.
Lillie Glasgow,	Franklin.
Lizzie R. Goelet,	Washington.
J. B. Gray,	Buncombe.
M. G. Gray,	Bertie.
Annie N. Green,	Chatham.
E. L. Green,	Wake.
W. M. Green,	Wake.
Maude E. Guess,	Wake.
Maude Gurlæy,	Bertie.
Emma Hackney,	Chatham.
Martha R. Hamlin,	Rockingham.
Olive Hamrick,	Cleveland.
Eleanor W. Hance,	District of Columbia.
Emma O. Hance,	District of Columbia.
Pearl Harper,	Wake.
Hattie T. Harrington,	Richmond.
J. J. Harrington,	Pitt.
Eugenia Harris,	Wake.
Clyde Harrison,	Wake.
Josie Hatch,	Chatham.
Susie Heartsfield,	Wake.
Lilly Hicks,	Wake.
A. R. Hodge, Jr.,	Wake.
Lillie Holloway,	Durham.
Luella Holloway,	Wake.
Lizzie Holman,	Wake.
Denie Mae Horton,	Wake.
Rebecca Pugh Hudgins,	Chowan.
Annie Hundley,	Rockingham.
Myra Hunter,	Halifax.
Norfleet M. Hunter,	Granville.
Mrs. Herbert W. Jackson,	Wake.
Ellen Jenkins,	Jones.
Lila Jenkins,	Jones.
Mrs. B. S. Jerman,	Wake.

Name.	*County or State.*
Mrs. M. J. Johnston,	Washington.
Stella Johnston,	Wake.
A. P. Jones,	Wake.
W. A. Judd,	Wake.
Susie Keel,	Pitt.
Bessie Kendrick,	South Carolina.
Lucy Kittrell,	Vance.
Robert Kittrell,	Granville.
Bessie Koonce,	Onslow.
Dunnie Koonce,	Jones.
Marie E. Lankford,	Wake.
Mary F. Lanneau,	Wake.
Byrd Lawrence,	Wake.
Mrs. Loula J. Lawrence,	Granville.
Nannie Leach,	Vance.
Henrietta Lee,	South Carolina.
C. H. Lentz,	Alexander.
May Lide,	Richmond.
T. H. Lindsey,	Tennessee.
Edna Lineberry,	Randolph.
E. W. Lockhart,	Orange.
Alica Love,	Wake.
Edna Love,	Alexander.
Catherine McArn,	Robeson.
Claudie McCullers,	Wake.
Ella McDaniel,	South Carolina.
Mrs. W. H. McKinnon,	Robeson.
Elizabeth W. McLean,	South Carolina.
Eunice MacKay,	Harnett.
Annie Lee MacMill,	Moore.
Mary R. Mackey,	Wake.
Kate Magness,	South Carolina.
Elizabeth D. Malloy,	South Carolina.
Mrs. Burkhead N. Mann,	Chatham.
A. J. Manning,	Pitt.
Mary V. Marsh,	Wake.
Elizabeth Massey,	Wake.
W. D. Massey,	Wake.
Emma Matthews,	Johnston.
Mrs. Paul B. Means,	Cabarrus.

Name.	*County or State.*
Edith Meyer,	Virginia.
Dora Miller,	Lenoir.
Ivey Mitchell,	Bertie.
Lizzie Mitchell,	Alleghany.
Etta Monroe,	Moore.
Terra Monroe,	Moore.
Eliza Moore,	Lenoir.
Katie Moore,	Beaufort.
Rosa Moore,	Robeson.
Lillie Morgan,	Union.
Lottie Morton,	Virginia.
Clyde B. Moss,	Halifax.
Myrtie Muse,	Moore.
Daisy Nance,	Granville.
Amanda Francis Nowell,	Bertie.
Mrs. Frank L. Oates,	Wayne.
Jennie T. Oldham,	Orange.
Jessie Wills Page,	Vance.
Mary Page,	Wake.
Sallie Parham,	Wake.
Eliza Parker,	Halifax.
Lyl Parish,	South Carolina.
C. B. Partin,	Wake.
Julia Pasmore,	Wake.
Stella Pasmore,	Wake.
D. A. Pate,	Scotland.
Janie Evans Patterson,	Scotland.
Mrs. P. C. Patterson,	Wake.
Alice E. Penny,	Wake.
George L. B. Penny,	Wake.
Neta Penny,	Wake.
Annie Perkins,	Pitt.
Isabel Pescud,	Wake.
Jane Pescud,	Wake.
Paul N. Pittinger,	Wake.
Lela B. Pool,	Wake.
Lucy M. Powell,	Wake.
Mary Lou Powers,	New Hanover.
Kate Pridgen,	Wake.
Annie M. Pulley,	Wake.

Name.	*County or State.*
Annie Purcell,	Robeson.
Edna C. Purcell,	Robeson.
Florence Purnell,	Franklin.
Rosa Quinery,	Pitt.
Minnie Quinn,	Pitt.
Annie E. Randolph,	Pitt.
L. N. Ranes,	Wake.
Alice E. Ray,	Wake.
Mrs. Paschall Reddish,	Wake.
Minnie Redford,	Wake.
Loula Riddle,	Wake.
Mrs. Wiley Rhodes,	South Carolina.
Wiley Rhodes,	South Carolina.
Ebie Roberts,	Wake.
Eugenia Roberts,	Gates.
Mattie Roberts,	Franklin.
Lelia Robertson,	Wake.
Euphemia Robinson,	Gaston.
Etta E. Rollins,	Wake.
Susanna Fels Rosenthal,	Wake.
Eva Ross,	South Carolina.
Hattie F. Rowland,	Vance.
Edith Royster,	Wake.
Mary R. Russell,	Durham.
Eva Sams,	South Carolina.
K. G. Shellem,	Cleveland.
Mrs. Franklin Sherman, Jr.,	Wake.
Mrs. Franc Sherwood,	Wake.
Virginia Shivers,	Edgecombe.
Mrs. Estoy Sigmon,	Wake.
Nannie Skinner,	Wake.
F. Sloan,	Wake.
Alma Smith,	Wake.
Bertha Smith,	Wake.
H. Y. Smith,	Wake.
Mildred Smith,	Wake.
O. De Smith,	Texas.
John W. Snipes,	Orange.
Anna E. Spain,	Pitt.
Elise Stamps,	Wake.

Name.	*County or State.*
Miriam Stamps,	Wake.
Bertha Stein,	Wake.
Meta L. Stewart,	Scotland.
Mary E. Stewart,	Scotland.
William Harry Stephenson,	Northampton.
Jessie O. Stockard,	Alamance.
Maria Street,	Chatham.
Anna M. Taylor,	Wilson.
Lena Taylor,	Wake.
Mamie E. Taylor.	
Lillian Terrell,	Wake.
Lizzie Terrell,	Wake.
Mrs. M. B. Terrell,	Wake.
Annie L. Thigpen,	Pitt.
Bertha Thompson,	Wayne.
Ida S. Thompson,	Durham.
Mrs. S. W. Thompson,	Wake.
Ida Tomlinson,	Wayne.
Mamie Tuck,	Johnston.
Sallie P. Tucker,	Pitt.
J. M. Turner,	Wake.
Maggie Turner,	Wake.
Mamie C. Turner,	Wake.
Lucye Twine,	Perquimans.
Carey Almon Upchurch,	Wake.
Lizzie H. Utley,	Wake.
W. W. Utley,	Wake.
Fred. Underwood,	Catawba.
Myrtle Underwood,	Wake.
Katie Vaughan,	Halifax.
Ada C. Ward,	Pitt.
Mary R. Watson,	Robeson.
A. C. Weatherly,	Durham.
Allie Weathers,	Wake.
Fannie May Webb,	Granville.
L. Mae Weeks,	Pasquotank.
Rosa Westray,	Wake.
Mrs. C. D. Whitley,	Wake.
Hallie O'Donnell Williams,	Hertford.
Jane Evans Williams,	Robeson.

Name.	*County or State.*
Martha J. Williams,	Wake.
May Williams,	Hertford.
Mrs. C. M. Williamson,	Wake.
Mary L. Wills,	Halifax.
C. W. Wilson,	Halifax.
Elizabeth Wilson,	Wake.
J. C. Wilson,	Alamance.
Myrtle Wilson,	Pitt.
Belle M. Wimbish,	Virginia.
Ida Winstead,	Wilson.
Ora H. Winston,	Franklin.
Georgia Witherspoon,	South Carolina.
Fannie Wood,	
Mollie J. Womack,	Rockingham.
Francis V. Womble,	Wake.
Mrs. Norma Wysong,	South Carolina.
Vivian Wysong,	South Carolina.
Anna C. Yates,	Wake.

FOURTEENTH ANNUAL COMMENCEMENT.

May 28, 1903.

BACHELOR OF AGRICULTURE.

JOHN ELIOT COIT.

BACHELORS OF ENGINEERING.

In Civil Engineering.

SUMMEY CROUSE CORNWELL,
BENNETT LAND, JR.,
JOHN THOMAS LAND,
JESSE JAMES MORRIS,
GEORGE YATES STRADLEY.

In Mechanical Engineering.

WILLIAM MORTON BOGART,
WALTER CLARK, JR.,
HUGH PIERCE FOSTER,
JONATHAN HOWARD GLENN,
EUGENE COLISTUS JOHNSON,
JOEL POWERS,
EDWARD HAYS RICKS.

In Electrical Engineering.

EUGENE ENGLISH CULBRETH,
THEOPHILUS THOMAS ELLIS,
JOHN DANIEL FERGUSON,
LAMAR CARSON GIDNEY,
EMIL GUNTER,
EDWARD SHAW LYTCH,
DAVID STARR OWEN,
JOHN HARVEY PARKER,
GASTON WILDER ROGERS.

In Textile Industry.

LESLIE NORWOOD BONEY,
JOHN SAMUEL P. CARPENTER,
WALTER LEE DARDEN,
JAMES MATTHEW KENNEDY,
CHARLES BURDETTE ROSS,
EDWARD ROE STAMPS,
EDWIN SEYMOUR WHITING.

BACHELORS OF SCIENCE.

In Industrial Chemistry.

CHARLES LESTER CREECH,
JUNIUS FRANKLIN DIGGS,
OLIVER MAX GARDNER,
JOHN HOUSTON SHUFORD,
CHARLES EDWARD TROTTER,
JONATHAN WINBORNE WHITE.

MASTER OF SCIENCE.

In Chemistry.

William Anderson Syme, B.S.

HONORS IN SCHOLARSHIP.

Senior Class.

J. E. Coit, J. H. Glenn,
E. Gunter.

Junior Class.

J. W. Farrior, W. W. Finley,
P. S. Grierson, J. B. Harding,
G. H. Hodges, William Kerr,
E. E. Lincoln, F. C. Phelps,
R. P. Reece, J. C. Temple,
J. K. Waitt.

Sophomore Class.

J. T. Bailey, E. G. Porter,
S. D. Wall, S. T. White,
J. A. Park, J. Rhodes Smith,
C. A. Seifert, J. E. Williams.

Freshman Class.

G. G. Allen, C. M. Hamilton,
J. F. Hanselman, H. L. Hamilton.

Short Course Class.

S. S. Mauney, W. W. Roseman.

Irregular Class.

W. R. Bailey.

HONORS FOR PUNCTUALITY.

George Gilderoy Allen, Hugh Pierce Foster,
Risden Tyler Allen, William Joel Patton,
William Osborne Crump, Charles Edward Trotter,
Marion Emerson Weeks.

PRIZES IN AGRICULTURE.

First Prize.

S. W. FOSTER.

Second Prize.

J. C. BEAVERS.

Medal, presented by Zenner Disinfectant Company for judging stock—W. W. FINLEY.

Cash prize of five dollars, offered by State Agricultural Society for best report of Stock Exhibit—FRANK R. SMITH.

United States Cream Separator, presented by Vermont Farm Machine Company for best essay on "The Making of a Dairy Farm"—CLARENCE LYTCH.

Sharples Cream Separator, presented by P. M. Sharples for best essay on "The Middle South as a Dairy Section"—W. W. FINLEY.

Ton of Commercial Fertilizer, presented by Caraleigh Phosphate and Fertilizer Company for best essay on "Soil Fertilization"—L. A. NIVEN.

Set of Rural Science Books, presented by the MacMillan Publishing Company for the best essay on "The Farmer's Library"—R. F. WARREN.

"Storer's Agriculture," presented by Charles Scribner's Sons for the best essay on "The Farmer a Student"—C. C. HARRELL.

Registered Jersey bull, presented by Fairview Dairy Farm for best essay on "Formation and Management of a Dairy Herd"—A. C. WHARTON.

PRIZES IN BIOLOGICAL CLUB CONTEST.

(PRIZES PRESENTED BY A. H. THOMAS CO.)

First Prize.

S. W. FOSTER.

Second Prize.

J. W. BULLOCK.

CHAMBERLAIN PRIZE.

For Best Kept Account of Expenses.

L. V. EDWARDS.

For Least Unnecessary Expenses.

J. P. SPOON.

REGISTER OF ALUMNI.

CLASS OF 1893.

Name.	*Degree.*	*Address.*
Robert Wilson Allen,	B. E.,	Reidsville, N. C.
Principal of Graded School.		
Samuel Erson Asbury,	B. S.,	Raleigh, N. C.
M. S. 1896. Assistant Chemist State Agricultural Department.		
Henry Emil Bonitz,	B. E.,	Wilmington, N. C.
Architect.		
Frank Fuller Floyd,	B. E.,	Knoxville, Tenn.
Superintendent Lynotype Plant for *Knoxville Sentinel.*		
Charles Duffy Francks,	B. E.,	Richlands, N. C.
Farmer and Merchant.		
Edward Moore Gibbon,	B. E.,	Charlotte, N. C.
Civil Engineer, The Engineering Company of America.		
George Pender Gray,	B. S.,	Memphis, Tenn.
Farm Manager.		
Charles Bolling Holladay,	B. E.,	Wilmington, Del.
Treasury Department The Dupont Co.		
William McNeill Lytch,	B. E.,	Laurinburg, N. C.
Superintendent Cotton Seed Oil Mill.		
James William McKoy,	B. E.,	Black Mountain, N. C.
Civil Engineer and Merchant.		
Walter Jerome Mathews,	B. E.,	Goldsboro, N. C.
Electrician and Chief Engineer for the Eastern N. C. Asylum for the Insane.		
Frank Theophilus Meacham,	B. S.,	Statesville, N. C.
M. S. 1894. Superintendent State Test Farm.		
Carl DeWitt Sellars,	B. E.,	Greensboro, N. C.
Bookkeeper for Cone Export and Commission Co.		
Charles Edgar Seymour,	B. S.,	Raleigh, N. C.
Farmer.		
Buxton Williams Thorne,	B. E.,	Holly Springs, Miss.
Assistant Cashier Merchants and Farmers Bank.		
William Harrison Turner,	B. E.,	Winston-Salem, N. C.
Secretary and Treasurer Wachovia Mills (F. & H. Fries) and Twin-City Wood Co.		

Name. *Degree.* *Address.*

CHARLES BURGESS WILLIAMS, B. S., Raleigh, N. C.
M. S. 1896. Assistant Chemist State Agricultural Department.

LOUIS THOMAS YARBROUGH, B. E., Raleigh, N. C.
Night Clerk Raleigh Post-office.

SAMUEL MARVIN YOUNG, B. E., Raleigh, N. C.
Of S. M. & W. J. Young.

CLASS OF 1894.

CHARLES EDWARD CORPENING, B. E., Lenoir, N. C.
Farmer and Dealer in Lumber and Real Estate.

DAVID COX, JR., B. E., Hertford, N. C.
Architect and County Surveyor.

ROBERT DONNELL PATTERSON, JR., B. S., Chase City, Va.
M. S. 1898. With American Tobacco Co.

CHARLES PEARSON, B. E., Charleston, S. C.
Draughtsman U. S. Government.

ZEBBIE GEORGE ROGERS, B. E., Washington, D. C.
Civil Engineer Baltimore and Ohio Railroad.

JOHN HYER SAUNDERS, B. E., Pinner's Point, Va.
Locomotive Engineer N. & C. R. R.

BENJAMIN FRANKLIN WALTON, B. S., West Raleigh, N. C.
N. C. Experiment Station.

JOHN MCCAMY WILSON, B. E., Inman, S. C.
Chief Engineer and Master Mechanic Inman Cotton Mill.

CLASS OF 1895.

THOMAS MARTIN ASHE,* B. E., Raleigh, N. C.
Architect—Pearson & Ashe.

JAMES ADRIAN BIZZELL, B. S., Ithaca, N. Y.
M. S. 1900. Ph. D. Cornell University. Chemist Cornell University Expt. Station.

JOHN ISHAM BLOUNT, B. E., Pittsburg, Pa.
C. E. 1897. M. E. Cornell University. Pennsylvania Steel Co.

JAMES WASHINGTON BRAWLEY, B. S., Mooresville, N. C.
Merchant and Farmer.

WALTER AUSTIN BULLOCK, B. S., Amsterdam, Ga.
Superintendent Tobacco Farm.

* Deceased.

Name.	*Degree.*	*Address.*
DAVID CLARK,	B. E.,	Charlotte, N. C.

M. E. Cor. Univ. M. E. 1896. C. E. 1897. President Clark Manufacturing Co. and President Eugenia Manufacturing Co., Jonesboro, N. C.

GEO. WASHINGTON CORBETT, JR., B. E., Raleigh, N. C.

Machinist and Chief Engineer Hildrup Wood Vulcanizing and Fire Proofing Co.

EDWIN SPEIGHT DARDEN, B. S., Wilson, N. C.

With Cooper & Watson, Tobacconists.

WILLIAM KEARNEY DAVIS, JR., B. E., Marion, S. C.

Superintendent Ashley Cotton Mills.

JOSEPH CHARLES DEY, B. S., Norfolk, Va.

Produce Broker.

LEE BORDEN ENNETT, B. S., Cedar Point, N. C.

Farmer.

ISAAC HENRY FOUST, B. E., Burlington, N. C.

Erecting Foreman Carolina Steel Bridge and Construction Co.

CHARLES WILLIS GOLD, B. S., Wilson, N. C.

Vice-President Peacock & Gold Co., Insurance.

WILLIAM HENRY HARRISS, B. E., Atlanta, Ga.

M. E. 1896. Representing Richard A. Blythe, Philadelphia, Pa.

CHRISTOPHER MILLER HUGHES, B. E., Raleigh, N. C.

B. S. 1899. With Commercial and Farmers Bank.

MALCOLM BEALL HUNTER, B. E., Camden, N. J.

Philadelphia Bell Telephone Co.

SAMUEL CHRISTOPHER MCKEOWN, B. E., Sumter, S. C.

Draftsman, The Sumter Telephone Manufacturing Co.

MANN CABE PATTERSON, B. E., Durham, N. C.

Farmer.

ABRAM HINMAN PRINCE, B. S., Washington, D. C.

U. S. Soil Survey.

VICTOR VASHTI PRIVOTT, B. E., Lexington, N. C.

Chief Engineer and Machinist Nokomis Cotton Mills.

HOWARD WISWALL, JR., B. E., Wilmington, N. C.

Engineer United States Engineer Department.

CHARLES GARRETT YARBROUGH, B. E., Chicago, Ill.

Foreman Testing Department Western Electric Co.

CHARLES MARCELLUS PRITCHETT, M. E., Washington, D. C.

C. E. 1896. Engineer U. S. Geological Survey.

CLASS OF 1896.

Name.	*Degree.*	*Address.*
DANIEL ALLEN,	B. S.,	Raleigh, N. C.
Of Pool & Allen.		
GEORGE STRONACH FRAPS,	B. S.,	College Station, Texas.
Ph. D. Johns Hopkins University. Acting Chemist Texas Experiment Station.		
MARION JACKSON GREEN,	B. S.,	Morganton, N. C.
Mechanical Instructor North Carolina School for Deaf and Dumb.		
JOHN HOWARD,	B. S.,	Blackwood, Va.
Resident Engineer Blackwood Coal and Coke Co.		
WILLIAM COLBERT JACKSON,	B. S.,	Ayden, N. C.
General Merchant.		
ROBERT GRAHAM MEWBORNE,	B. S.,	Louisville, Ky.
Chemist Kentucky Tobacco Product Co.		
LEVI ROMULUS WHITTED,	B. S.,	Charleston, S. C.
C. E. 1897. Draughtsman in charge U. S. Navy Department.		
HENRY LLOYD WILLIAMS,	B. S.,	Willeyton, N. C.
General Manager Willeyton Lumber Co.		

CLASS OF 1897.

JOSEPH SAMUEL BUFFALOE,	B. S.,	Garner, N. C.
Physician.		
JOHN WILLIAM CARROLL,	B. S.,	Wallace, N. C.
M. D. University of Maryland 1903. Physician.		
CHARLES EDWARD CLARK,	B. S.,	Charlotte, N. C.
Truck Farmer.		
WM. ALEXANDER GRAHAM CLARK,	B. S.,	Jonesboro, N. C.
M. E. Cornell Univ. Treasurer Eugenia Mfg. Co. and Clark Mfg. Co., Jonesboro, N.C.		
NICHOLAS LOUIS GIBBON,	B. S.,	Biddeford, Me.
Mill Engineer Saco & Pettee Machine Works.		
C. D. HARRIS,	B. S.,	Raleigh, N. C.
A. M. Cornell Univ. Asst. Chemist and Microscopist N. C. Dept. of Agriculture.		
JERE EUSTIS HIGHSMITH,	B. S.,	Maitland, N. C.
Farmer.		
CLYDE BENNETT KENDALL,	B. S.,	Washington, D. C.
Field Assistant U. S. Geological Survey.		
SYDNEY GUSTAVUS KENNEDY,	B. S.,	Newark, N. J.
With J. S. Mundy Engine Works.		

Name. *Degree.* *Address.*

JOSEPH LAWRENCE KNIGHT, B. S., Dewey, Fla.
Firm of Pitt & Knight, Naval Stores and Cattle.

WALTER JONES MCLENDON, JR., B. S., Marshall, N. C.
President and General Manager Capitola Mfg. Co.

REPTON HALL MERRITT, B. S., McAdensville, N. C.
Book-keeper Cotton Mill.

ALBERT HICKS OLIVER, B. S., New Orleans, La.
Dairyman and Farm Superintendent.

HUGH WILLIAM PRIMROSE,* B. S., Raleigh, N. C.
M. S. 1900.

WILLIS HUNTER SANDERS, B. S., Roanoke Rapids, N. C.
Chief Engineer Roanoke Navigation and Water-power Co.

THOMAS JEHU SMITHWICK, B. S., Port Royal, S. C.
Electrical Engineer Navy Yard.

LEA WATSON, B. S., Atlanta, Ga.
Manager Southern Engineering Specialty Co.

BRADLEY JEWETT WOOTTEN,* B. S., Wilmington, N. C.
Lieutenant U. S. Army.

CLASS OF 1898.

DORSEY FROST ASBURY, B. S., Seattle, Wash.
Ventilation Draughtsman Moran Bros. Shipyard.

SIDNEY HAMILTON BECK, B. S., Washington, D. C.
Marine Engineer Navy Department.

ANSON ELIKEM COHOON, B. S., Washington, D. C.
With Forestry Division Department of Agriculture.

HUGH MCCULLOM CURRAN, B. S., Washington, D. C.
With Forestry Division Department of Agriculture.

BENJAMIN CAREY FENNELL, B. S., Charlotte, N. C.
M. E. 1900. Engineer, A. H. Washburn.

ALPHEUS ROUNTREE KENNEDY, B. S., Mystic, Conn.
Draughtsman Eastern Ship Building Co.

FREDERICK CREECY LAMB, B. S., Raleigh, N. C.
Assistant Chemist N. C. Department of Agriculture.

EDWIN BENTLEY OWEN, B. S., Chicago, Ill.
Graduate Student Chicago University.

---

* Deceased.

Name.	*Degree.*	*Address.*
MOORE PARKER,	B. S.,	Clemson, S. C.
Assistant in Carding and Spinning Clemson Agricultural College.		
NUMA REID STANSEL,	B. S.,	Portsmouth, Va.
Chief Electrical Engineer U. S. Navy Yard.		
TEISAKU SUGISHITA,	B. S.,	Kokufu, Hida, Japan.
Civil Engineer.		
GEORGE FREDERICK SYME,	B. S.,	Copen, W. Va.
Resident Civil Engineer Coal and Coke Railway.		

CLASS OF 1899.

WM. DAVIDSON ALEXANDER, JR.,	B. S.,	Charlotte, N. C.
Assistant Superintendent Mecklenburg Iron Works.		
IRA WILSON BARBER,	B. S.,	Port Royal, S. C.
Electrical Machinist Naval Station.		
JOHN HENDERSON BIRDSONG,	B. S.,	Duquesne, Pa.
Chemist Carnegie Steel Company.		
FRANCIS MARION FOY,	B. S.,	Scotts Hill, N. C.
Truck Farmer.		
ALBERT SIDNEY LYON,	B. S.,	Roanoke Rapids, N. C.
Superintendent Roanoke Navigation and Water Power Co.'s Electrical Power Plant.		
CARROLL LAMB MANN,	B. S.,	West Raleigh, N. C.
Instructor in Civil Engineering.		
O'KELLY WILLIAM MYERS,	B. S.,	Washington, N. C.
Civil Engineer, U. S. Engineering Department.		
EUGENE LEROY PARKER,	B. S.,	Mt. Pleasant, Tenn.
Chemist Federal Chemical Co.		
EUGENE GRAY PERSON,	B. S.,	Concord, N. C.
Book-keeper Gibson Manufacturing Co.		
FREDERICK ERASTUS SLOAN,	B. S.,	West Raleigh, N. C.
Registrar N. C. College of Agriculture and Mechanic Arts.		
ANDREW THOMAS SMITH,	B. S.,	Newsport News, Va.
Draftsman, Newport News S. S. and D. D. Co.		
ALEXIS PRESTON STEELE,	B. S.,	Statesville, N. C.
Mechanical Engineer J. C. Steele & Son's Brick Machinery Co.		
WILLIAM ANDERSON SYME,	B. S.,	Baltimore, Md.
M. S. 1903. Graduate Student Johns Hopkins University.		

Name.	*Degree.*	*Address.*
HUGH WARE,	B. S.,	Ensley, Ala.
Assistant Chemist Tennessee Coal, Iron and Railroad Co.		
CLAUD BURGESS WILLIAMS,	B. S.,	Norfolk, Va.
Resident Physician Protestant Hospital.		

CLASS OF 1900.

KEMP ALEXANDER, B. E., Kernersville, N. C.
Superintendent Davis-Crews Co. Hosiery Mill.

LESLIE LYLE ALLEN, B. E., Newport News, Va.
Draughtsman Newport News Ship Building Co.

ROBERT LINN BERNHARDT, B. S., Salisbury, N. C.
With Salisbury Hardware and Furniture Co.

LESLIE GRAHAM BERRY, B. E., Chicago, Ill.
Structural Engineer with Purdy & Henderson.

JAMES HARRY BUNN, B. E., Henderson, N. C.
Assistant Secretary Henderson Cotton Mill.

SAMUEL MERRILL HANFF, B. S., Sewanee, Tenn.
Theological Student University of the South.

GEORGE ROLAND HARRELL, B. S., Baltimore, Md.
Metallurgist The Baltimore Copper Smelting and Rolling Co.

HENRY ALLEN HUGGINS, B. S., Raleigh, N. C.
Chemist Caraleigh Phosphate Co.

GARLAND JONES, JR., B. S., Fort Worth, Tex.
Chemist Armour & Co.

LOUIS HENRY MANN, B. E., Middleton, N. C.
Dentist.

ROBERT HALL MORRISON, B. E., Mariposa, N. C.
Assistant Manager Cotton Mill.

WILLIAM MONTGOMERY PERSON, B. E., Steelton, Pa.
Draughtsman Pennsylvania Steel Co.

JUNIUS EDWARD PORTER, B. E., Portsmouth, Va.
Chief Draughtsman S. A. L. Railway.

ROGER FRANCIS RICHARDSON, B. E., West Raleigh, N. C.
Graduate Student N. C. College of A. and M. Arts.

WILLIAM EDWIN ROSE, B. E., Newport News, Va.
Draughtsman Newport News S. S. and D. D. Co.

FLOYD DE ROSS, B. E., Charlotte, N. C.
Electrician The S. B. Alexander Jr. & Co.

Name.	*Degree.*	*Address.*
IRA OBED SCHAUB,	B. S.,	Urbana, Ill.
Assistant Chemist Agricultural Experiment Station.		
JOHN WADE SHORE,	B. S.,	Boonville, N. C.
Teacher and Farmer.		
WILLIAM TURNER SMITH,	B. E.,	Atlanta, Ga.
Bridge Engineer George H. Crafts Bridge Co.		
SOLOMON ALEXANDER VEST,	B. S.,	Goodrich, Tenn.
Chemist Standard Iron Co.		
ROSCOE MARVIN WAGSTAFF,	B. E.,	Newport News, Va.
With Newport News Ship Building Co.		
GAITHER HALL WHITING,*	B. S.,	Richmond, Va.
Assistant Chemist Virginia-Carolina Chemical Co.		

CLASS OF 1901.

FLETCHER HESS BARNHARDT,	B. E.,	Phœnixville, Penn.
Civil Engineer with Phœnix Bridge Co.		
WILLIAM OSBORNE BENNETT,	B. E.,	Wadesboro, N. C.
Superintendent Independent Cotton Oil Co.		
FRED WILLIAM BONITZ,	B. E.,	Wilmington, N. C.
Contractor and Builder.		
ZOLLY MOSBY BOWDEN,	B. E.,	Mulberry, Fla.
Electrical Superintendent with James Hull & Co.		
BEDFORD JETHRO BROWN,	B. E.,	Newark, N. J.
With the Westinghouse Electric Co.		
PAUL COLLINS,	B. S.,	Louisville, Ky.
With Franklin Publishing Co.		
WILLIAM PESCUD CRAIGE,	B. S.,	New Orleans, La.
With Peter F. Pescud, Insurance.		
WILLIAM LOIS CRAVEN,	B. E.,	Burlington, N. C.
Chief Draughtsman Carolina Steel Bridge and Construction Co.		
FELIX GRAY CRUTCHFIELD,	B. E.,	Philadelphia, Penn.
Chemist Baldwin Locomotive Works.		
GEORGE MASLIN DAVIS,	B. E.,	Winston-Salem, N. C.
Designing Engineer with Salem Iron Works.		
WILLIAM DOLLISON FAUCETTE,	B. E.,	Savannah, Ga.
Civil Engineer S. A. L. Railway.		

* Deceased.

Name.	*Degree.*	*Address.*
BENJAMIN OLIVER HOOD,	B. E.,	Burlington, N. C.
Structural Draughtsman Carolina Steel Bridge and Construction Co.		
MARTIN KELLOGG,	B. Agr.,	Sunbury, N. C.
Farmer.		
JESSE JULIAN LILES,	B. E.,	Schenectady, N. Y.
Testing Department General Electric Co.		
LEWIS OMER LOUGEE,	B. E.,	Scottdale, Penn.
Engineer Frick Coke Co.		
CHARLES HARDEN MCQUEEN,	B. E.,	Winston, N. C.
Civil Engineer with J. L. Ludlow, C. E.		
WILLIAM FRANKLIN PATE,	B. S.,	Urbana, Ill.
Assistant Chemist Agricultural Experiment Station.		
EDWARD OSCAR SMITH,	B. E.,	Newport News, Va.
Draughtsman Newport News Ship Building and Dry Dock Co.		
WALTER STEPHEN STURGILL,	B. E.,	West Point, N. Y.
Student U. S. Military Academy.		
BEVERLY NATHAN SULLIVAN,	B. S.,	Winston-Salem, N. C.
With Winston-Salem Gas and Lighting Establishment.		
CHARLES AUGUSTUS WATSON,	B. S.,	Winston-Salem, N. C.
Dyeing Department Fries Manufacturing Co.		
BENJAMIN VADEN WRIGHT,	B. E.,	Algiers, La.
Civil Engineer Southern Pacific Railway.		

CLASS OF 1902.

WILLIAM DAVID BOSEMAN,	B. E.,	Rocky Mount, N. C.
Farmer.		
JUNIUS SIDNEY CATES,	B. S.,	Raleigh, N. C.
N. C. Department of Agriculture.		
ROBERT BAXTER COCHRAN,	B. E.,	Lynn, Mass.
General Electric Co.		
JAMES LUMSDEN FEREBEE,	B. E.,	Pittsboro, N. C.
Civil Engineer Durham and Charlotte Railway Co.		
ROBERT IRVING HOWARD,	B. E.,	Conetoe, N. C.
Farmer.		
JOHN LUTHER MCKINNON,	B. Agr.,	Laurinburg, N. C.
Farmer.		
LAURIE MOSELEY,	B. E.,	Burlington, N. C.
Draughtsman Carolina Steel Bridge and Construction Co.		

Name.	*Degree.*	*Address.*
VASSAR YOUNG MOSS,	B. E.,	Portsmouth, Va.
Machinist U. S. Navy Yard.		
CHARLES ARTHUR NICHOLS,	B. E.,	Barnard, N. C.
General Manager French Broad Mfg. Co.		
JAMES LAFAYETTE PARKER,	B. E.,	Burlington, N. C.
Structural Draftsman Carolina Steel Bridge and Construction Co.		
WILLIAM BENEDICT REINHARDT,	B. E.,	Dawson, Y. T.
Inspector, Dawson Electric Light and Power Co.		
RUSSELL ELSTNER SNOWDEN,	B. E.,	Snowden, N. C.
Civil Engineer, Coal and Coke Railway, Weston, W. Va.		
JOSEPH PLATT TURNER,	B. E.,	Spray, N. C.
Superintendent of Weaving, Cotton Mill.		
CLEVELAND DOUGLASS WELCH,	B. E.,	West Raleigh, N. C.
Graduate Student N. C. College of A. and M. Arts.		

CLASS OF 1903.

WILLIAM MORTON BOGART,	B. E.,	Charlotte, N. C.
Draftsman General Fire Extinguisher Co.		
LESLIE NORWOOD BONEY,	B. E.,	Greensboro, N. C.
Draftsman, J. H. Hopkins, Architect.		
JOHN SAMUEL PINCK. CARPENTER,	B. E.,	Cherokee, S. C.
Cotton Mill.		
WALTER CLARK, JR.,	B. E.,	Chapel Hill, N. C.
Law Student University N. C.		
JOHN ELIOT COIT,	B. Agr.,	Ithaca, N. Y.
Graduate Student in Horticulture Cornell University.		
SUMMEY CROUSE CORNWELL,	B. E.,	Greensboro, N. C.
Assistant City Engineer.		
CHARLES LESTER CREECH,	B. S.,	Winston-Salem, N. C.
With F. & H. Fries, Dyeing Department.		
EUGENE ENGLISH CULBRETH,	B. E.,	West Raleigh, N. C.
Graduate Student N. C. College of A. and M. Arts.		
WALTER LEE DARDEN,	B. E.,	West Raleigh, N. C.
Graduate Student N. C. College of A. and M. Arts.		
JUNIUS FRANKLIN DIGGS,	B. S.,	Diggs, N. C.
Farmer.		
THEOPHILUS THOMAS ELLIS,	B. E.,	Henderson, N. C.
Farmer.		

Name.	*Degree.*	*Address.*
JOHN DANIEL FERGUSON,	B. E.,	Spartanburg, S. C.
Assistant Civil and Hydraulic Engineer with Ladshaw & Ladshaw.		
HUGH PIERCE FOSTER,	B. E.,	Portsmouth, Va.
Machinist, U. S. Navy Yard.		
OLIVER MAX GARDNER,	B. S.,	West Raleigh, N. C.
Instructor in Chemistry N. C. College of A. and M. Arts.		
LAMAR CARSON GIDNEY,	B. E.,	Schenectady, N. Y.
General Electric Co.		
JOHN HOWARD GLENN,	B. E.,	West Raleigh, N. C.
Instructor in Drawing N. C. College of A. and M. Arts.		
EMIL GUNTER,	B. E.,	Schenectady, N. Y.
General Electric Co.		
EUGENE COLISTUS JOHNSON,	B. E.,	Ingold, N. C.
Milling.		
JAMES MATTHEW KENNEDY,	B. E.,	Goldsboro, N. C.
Farmer.		
BENNETT LAND, JR.,	B. E.,	Truth, N. C.
Assistant Engineer Cape Fear Power Co.		
JOHN THOMAS LAND,	B. E.,	Elizabeth City, N. C.
Architect and Civil Engineer.		
EDMOND SHAW LYTCH,	B. E.,	Wilkinsburg, Pa.
Westinghouse Electric Co.		
JESSE JOHN MORRIS,	B. E.,	Norfolk, Va.
Civil Engineer Raleigh and Pamlico Sound Railroad.		
DAVID STARR OWEN,	B. E.,	Truth, N. C.
With Pepper & Register, Contractors.		
JOHN HARVEY PARKER,	B. E.,	New Britain, Conn.
With The Corbin Screw Corporation.		
JOEL POWERS,	B. E.,	Goldsboro, N. C.
Draftsman and Machinist, Dewey Bros.		
EDWARD HAYS RICKS,	B. E.,	Philadelphia, Pa.
With Baldwin Locomotive Works.		
GASTON WILDER ROGERS,	B. E.,	Birmingham, Ala.
Electrical Engineer Southern Bell Telephone and Telegraph Co.		
CHARLES BURDETTE ROSS,	B. E.,	Charlotte, N. C.
Assistant Manager Charlotte House Moving Co.		
JOHN HOUSTON SHUFORD,	B. S.,	Winston-Salem, N. C.
Head Dyer P. H. Hanes Knitting Co.		

Name.	*Degree.*	*Address.*
Edward Roe Stamps,	B. E.,	South Norfolk, Va.
With F. S. Royster Guano Co.		
George Yates Stradley,	B. E.,	Asheville, N. C.
Civil Engineer Mountain Retreat Association.		
Charles Edward Trotter,	B. S.,	Raleigh, N. C.
Hospital Steward State Penitentiary.		
Jonathan Winborne White,	B. S.,	Raleigh, N. C.
Dyer, Raleigh Hosiery Mill.		
Edwin Seymour Whiting,	B. E.,	Hamlet, N. C.
Employe S. A. L. Railway.		

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